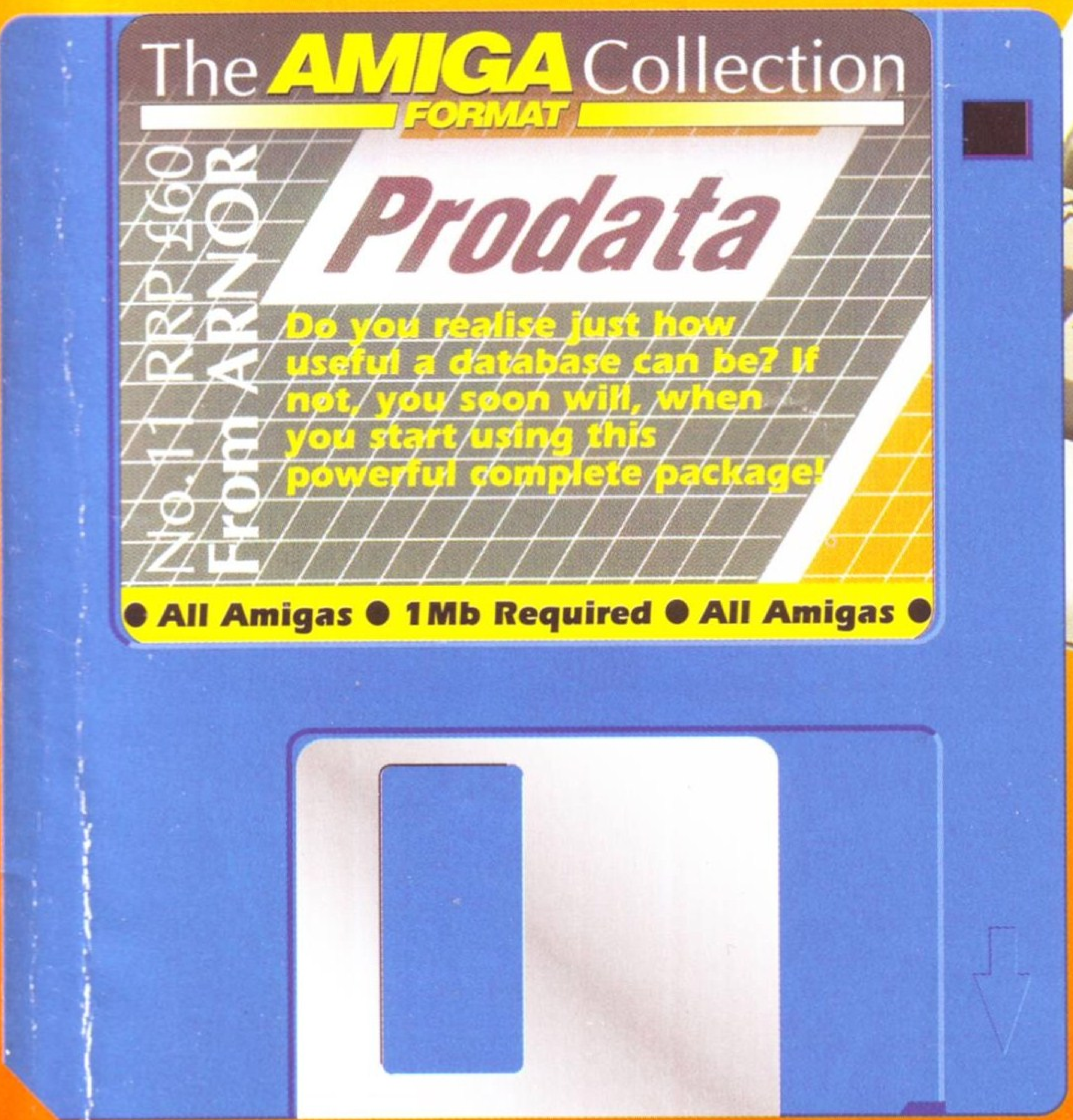
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AMIGA FORMAT

ISSUE 43 ■ FEBRUARY 1993 ■ £3.95

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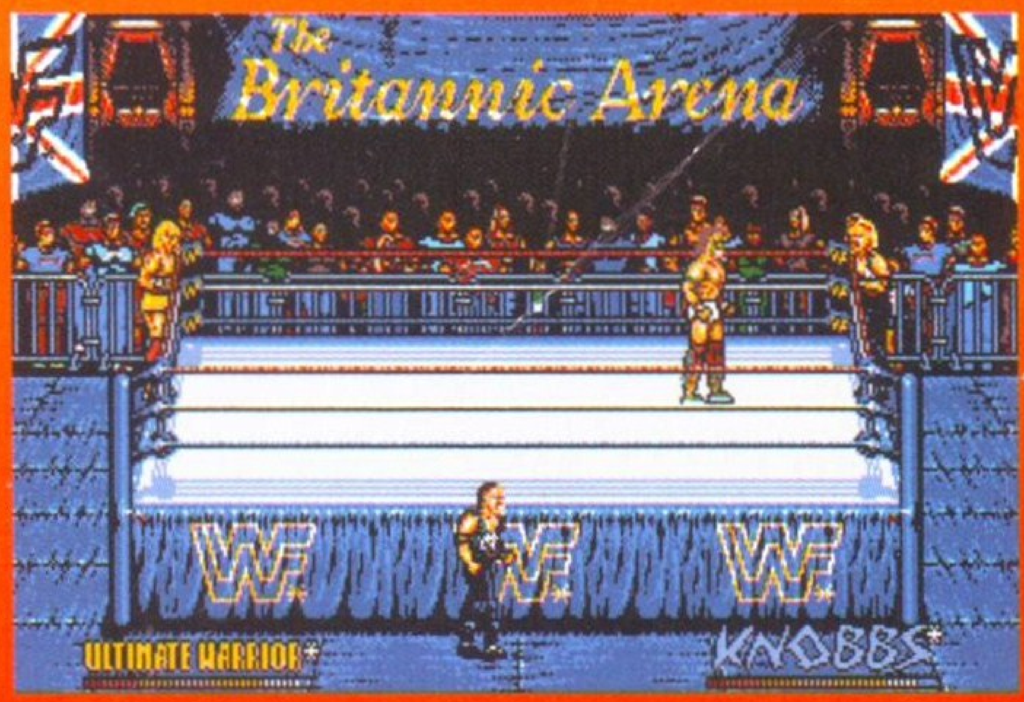




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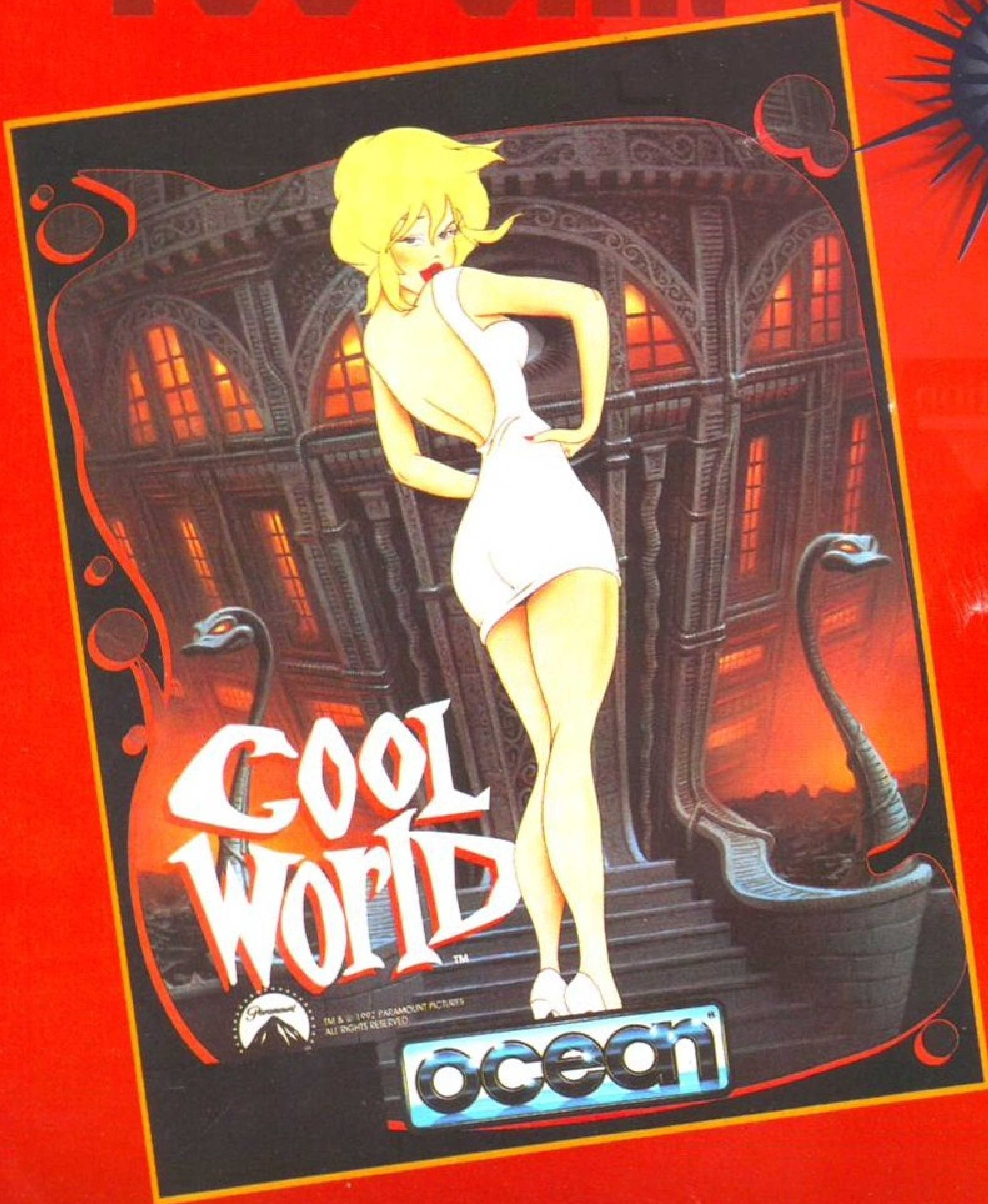


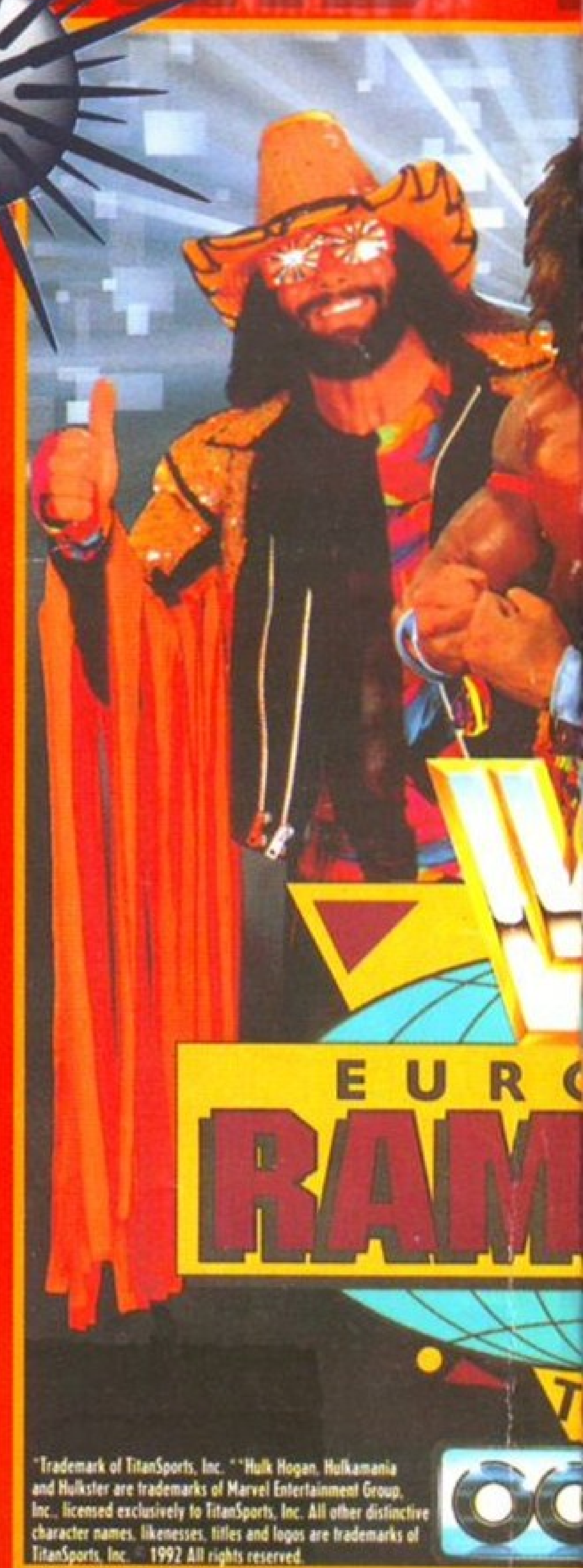
One of these games is great – one isn't. Find out which is which inside!

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But Holli's dream is to shed her Doodle indentity... to become a real woman - with a real interest in Jack! Her dream could destroy both worlds.
Kiss goodbye to Jack... and hello to oblivion!

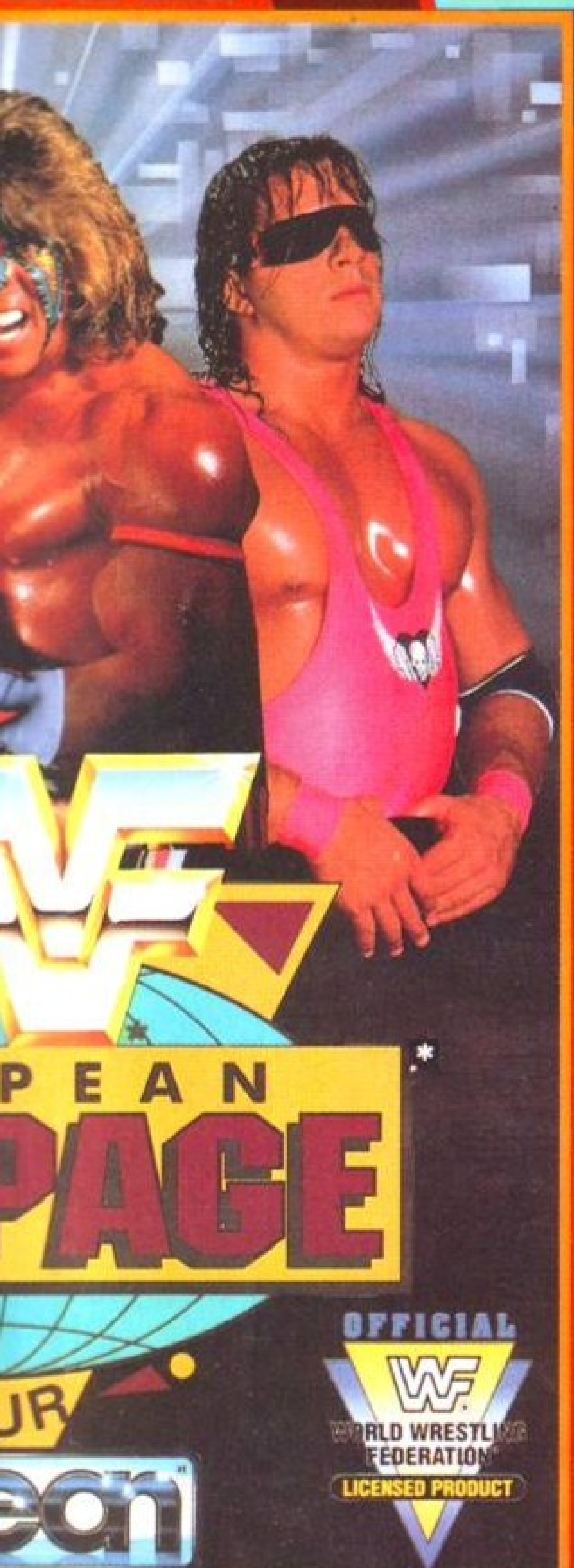


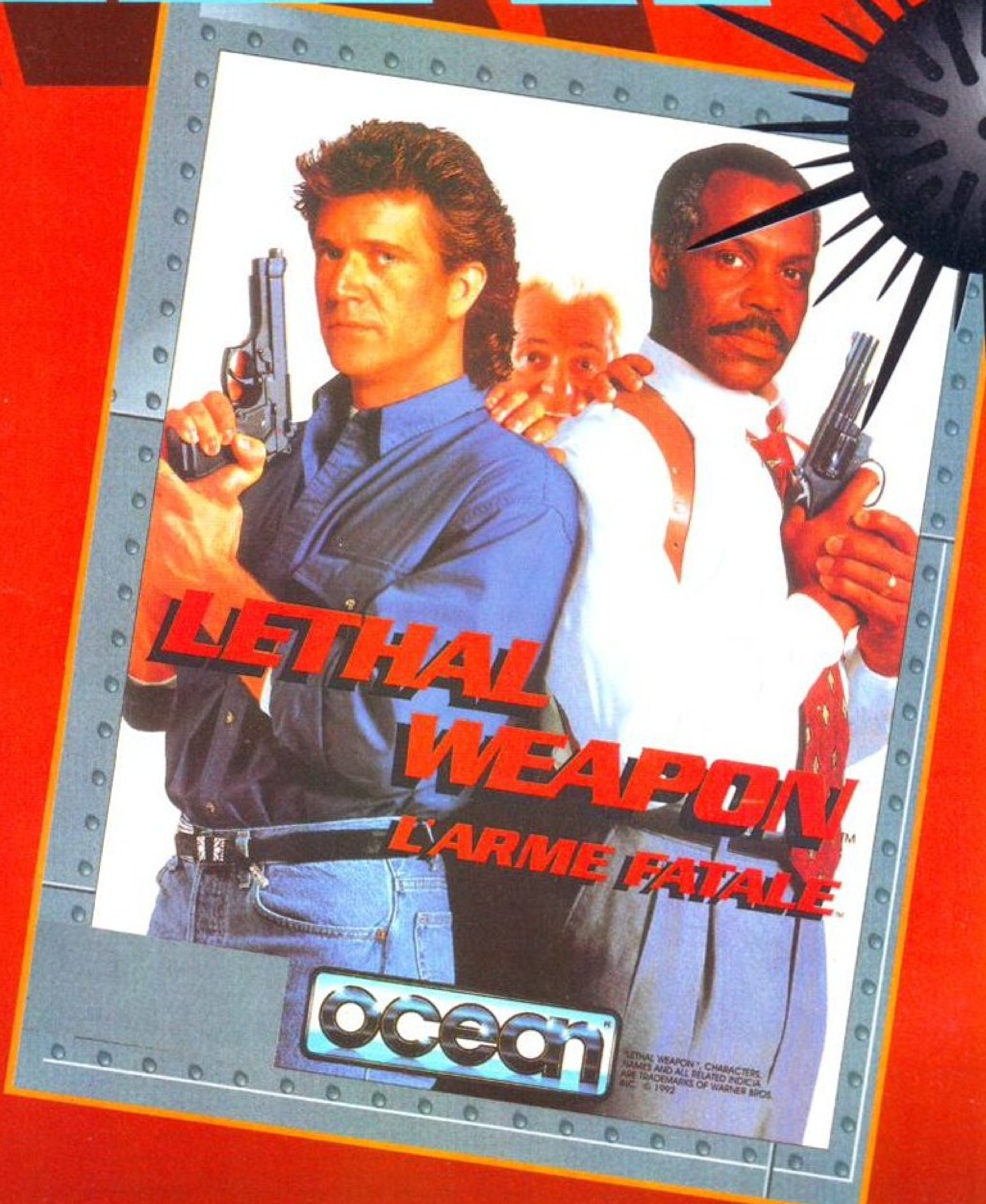
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FEBRUARY 1993

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Post-festive, but still mildly amusing joke of the month:

Did you hear about the dyslexic devil-worshipper?
He sold his soul to Santa.

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News

Screenplay 57



THE BIG FIGHT

Streetfighter 2 versus *WWF2*, the two most-hyped games this year. One's great, the other's grim: but which is which? Find out now!

Reviews



REVIEWED
The Publisher

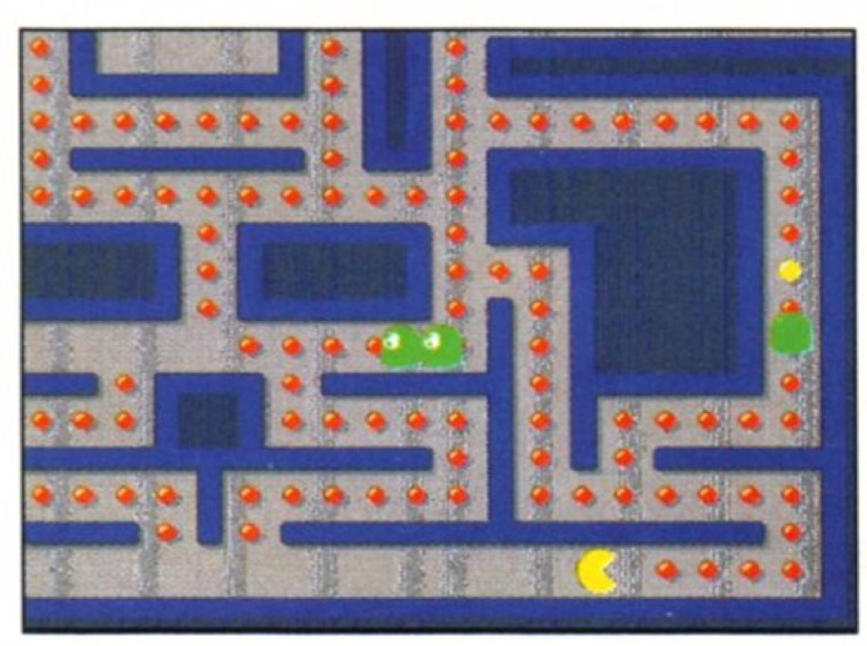
Budget DTP scales new heights with this new package that has features previously unseen at the price. See if it makes the grade on Page 150.



REVIEWED
Video Master

Microdeal's budget multimedia package allows sound and video digitising all in one package. We put it to the test on Page 136.

Regulars



IN PD UPDATE:

Return of a classic: *Pacman* hits back in a new version that will cost you only a touch more than the price of a blank disk!



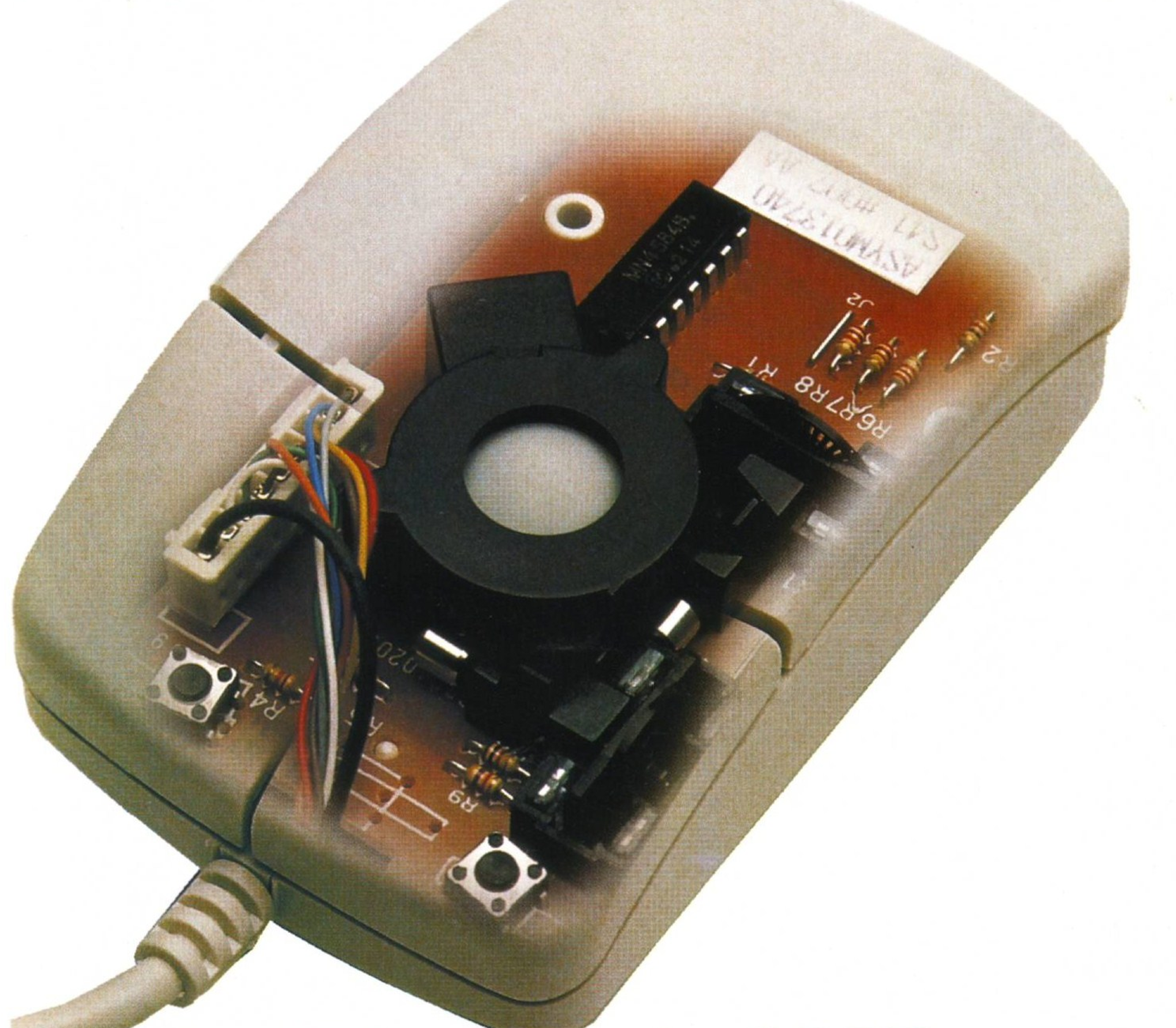
IN PD DEMOS:

Possibly the best music demo you've ever seen (and heard). Or possibly not. Still, *Jesus on E's* is an art form in itself…

Exploded! The secrets of the Amiga

Or 'How it Works: the Amiga'. Never before has anyone given you this much information on how the best computer in the world functions, revealing all of its innermost secrets. We'll show you absolutely everything, from how a chip works, all the way up to how a monitor displays a picture. It's the ideal guide to computers for the complete beginner and even experienced Amiga owners can learn a thing or two!

PAGE 32



What will happen in 1993...

Four new Amigas to be released! One is a console, one is a full-colour portable! CD drives in all the low-end machines! Can this possibly be true? What are the other two machines? And what do we really think will – and should – happen over the course of this year...?

PAGE 48

Welcome to Amiga Format!

And welcome, indeed, to 1993! A Happy New Year to you all (though we're a week or two late with it – who really minds, eh?) and an extra-special welcome to all new readers, because there's quite a few of you at this time of year.

All you lucky people who got a new Amiga for Christmas, you're the ones I'm talking about. You have ahead of you, stretching to the horizon, a whole new world of entertainment and enterprise to explore. Or something like that.

Anyway, the point is that this issue is kind of dedicated to you lot. That's why we decided it was a good time to explore how the Amiga works, and do it in a way that we don't remember ever seeing in a computer magazine before – ever.

It's always mystified me exactly how computers work. What's going on inside a silicon chip? How can you get binary numbers, like 1s and 0s, and make them into maths problems? It's a mystery.



Damien Noonan, Editor

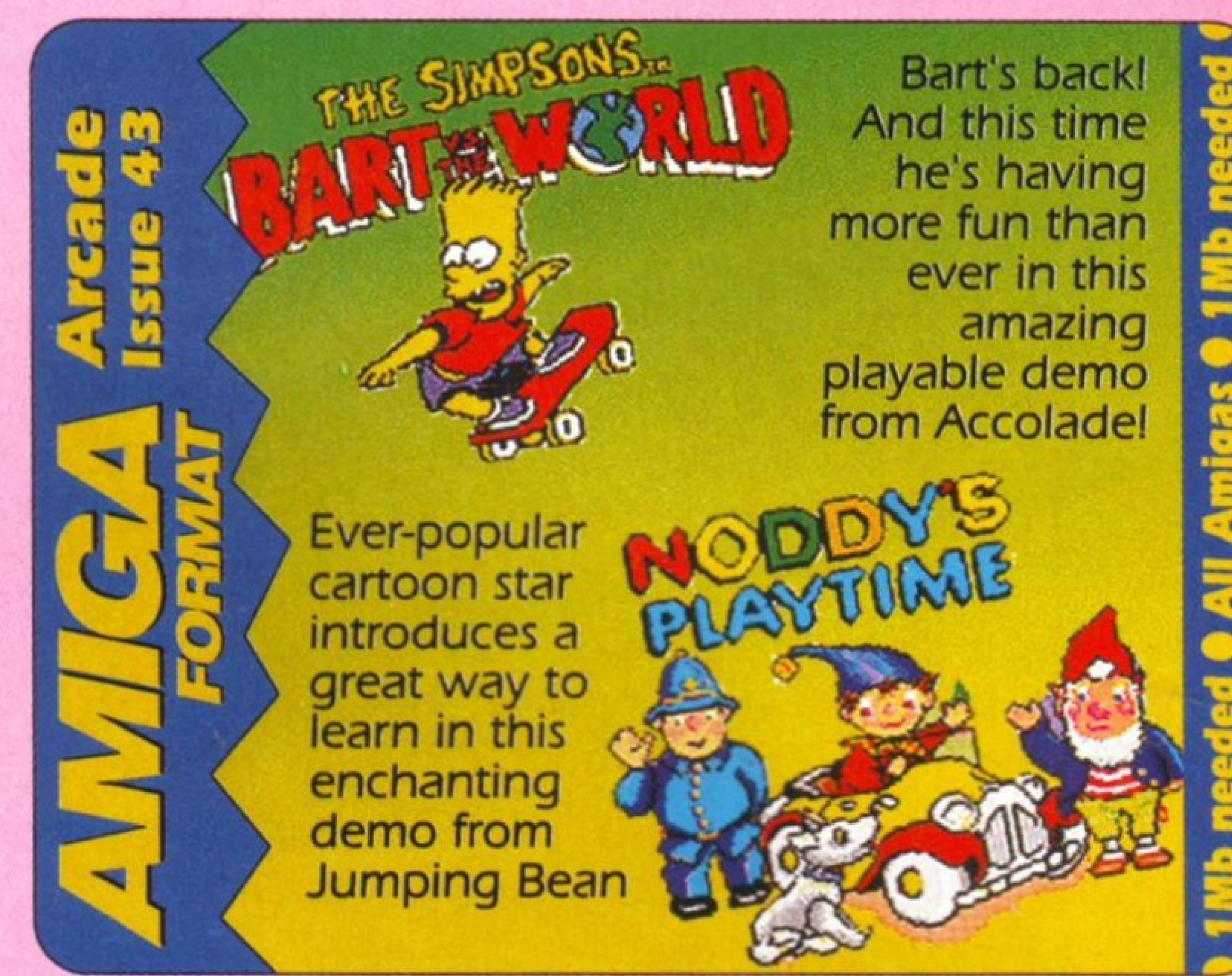
But not any more. By the time you've finished reading this month's article, with any luck you'll be one of the most clued-up people on the planet when it comes to sussing out – and explaining to other, less fortunate souls – how a computer works.

So we hope you enjoy that. Elsewhere in the magazine, we've got something that may appeal a little more to the old hands. It's only two pages long, but packed in there you'll find all the major issues facing the Amiga at the moment.

Not only do we predict four possible futures for the Amiga, in the shape of four machines that Commodore may (or may not) consider releasing, but we also set the agenda for the major Amiga issues of the year. Will people listen? We'll see!

COVERDISK

Turn to Page 6



Bart Simpson versus the World

Fully playable 'taster' featuring sample bits from the Chinese levels of Bart vs the World, Accolade's latest fun-packed whizzaround featuring the world's best-known bad kid!

Noddy's Playtime

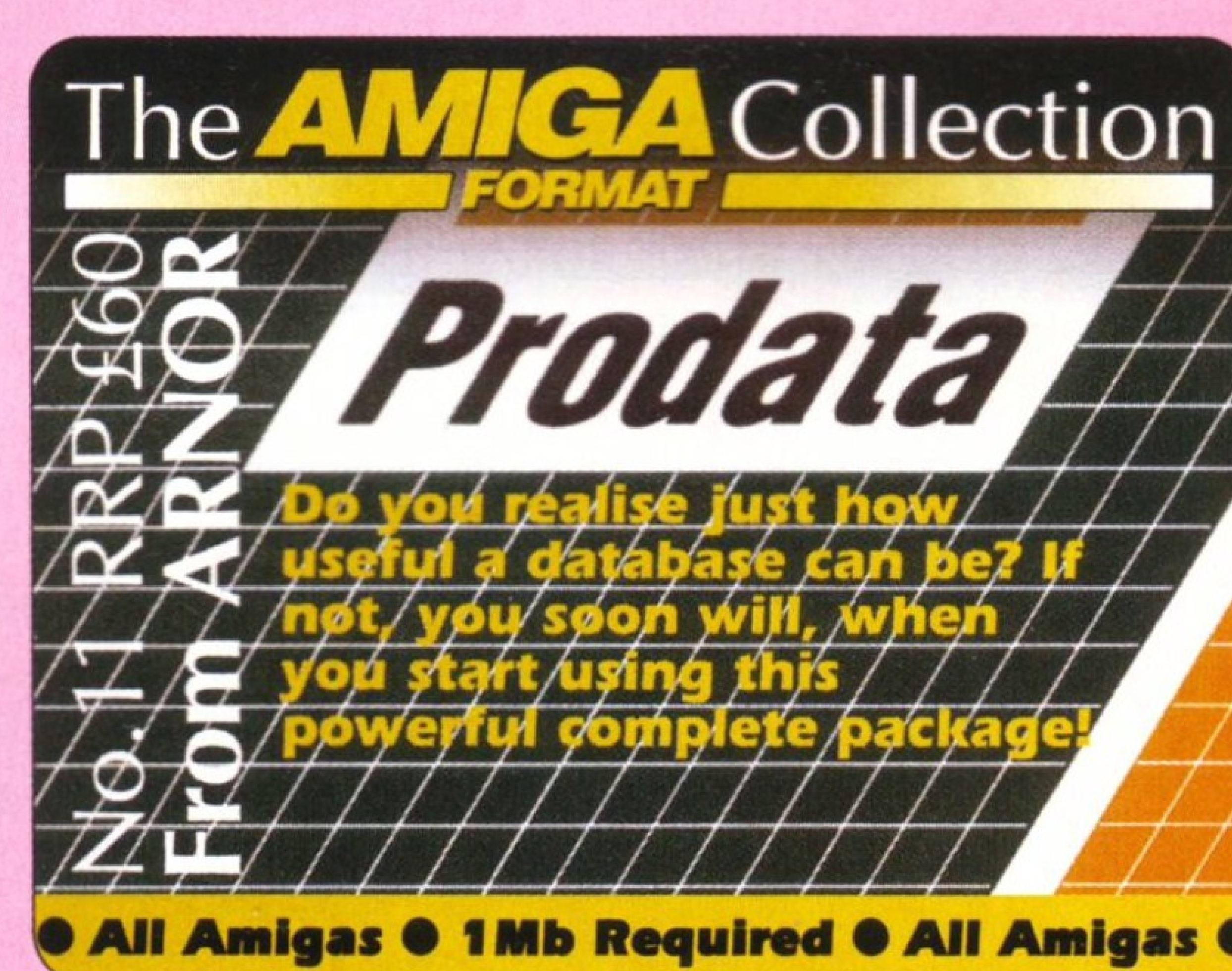
Playable/useable demo featuring two of the 10 activities from Jumping Bean's delightful educational package, including a test version of the lovely kids' paint package...

Bullfrog Convert

You're using Devpac2 for your programming, but you want to create some graphics. Simply use DPaint and then this and you're laughing!

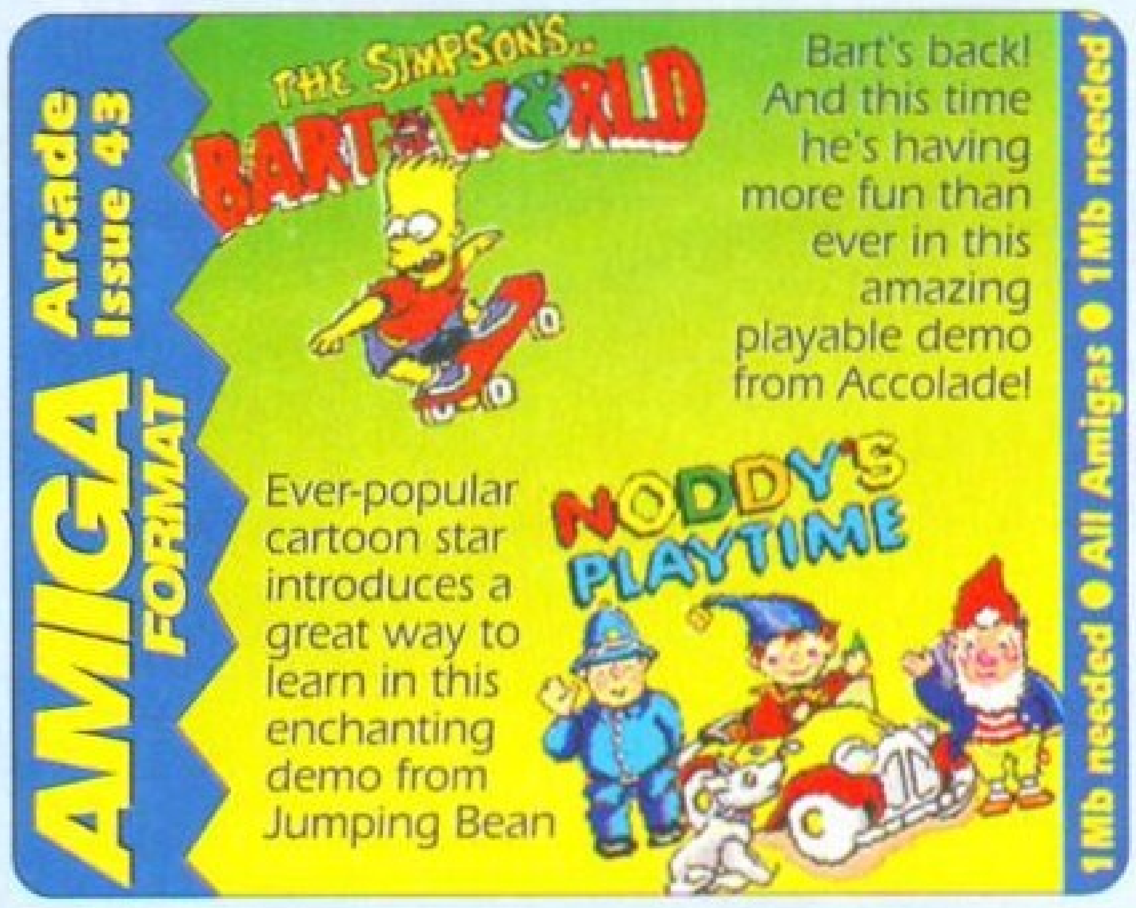
Alien Breed Fix

Courtesy of Team 17, here's a vital little modification you can make to your copy of the Special Edition to give it that little extra!



AF Collection No.11 Prodata Page 13

Database? What use is a database? Well, as soon as we show you how to use it you'll release it's one of the most useful programs you can have. Start collating information now!



Coverdisk

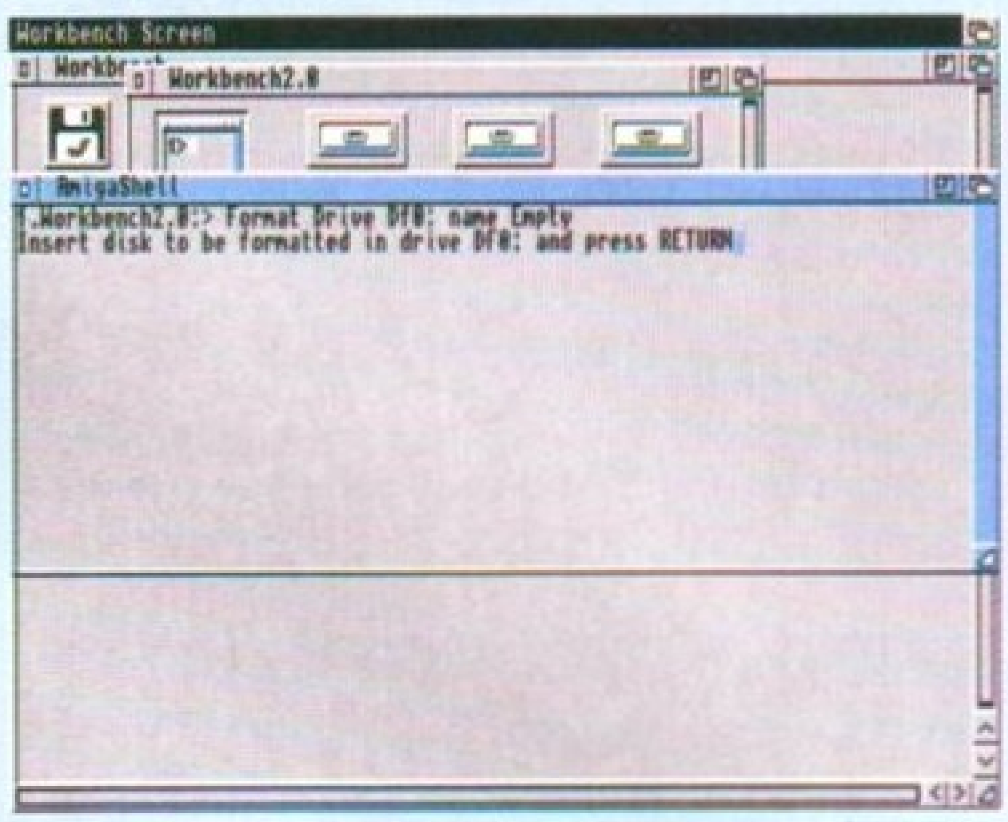
Grab that important piece of magnetic media that's securely taped to the front of the magazine. Now, let **Pat McDonald** show you how easy it is to get the most out of your Coverdisk, and tell you all about those two contrasting young juveniles... Noddy and Bart!

GETTING STARTED

From the Coverdisk, you will be able to install two demos (*Noddy* and *Bart Vs The World*), fix defective *Alien Breed Special Edition* disk and use the picture-to-machine-code *Convert* program. The instructions for *Convert* can be found on Page 114. If you want information on the *Prodata* disk, turn to Page 13.

You can look at the *Convert* document or run the Alien_Breed_Fix straightaway, again by double clicking. However, to actually play the *Noddy* or *Bart* demos, you first have to make demo disks. You will need two blank disks, one for each demo, preferably freshly formatted, on which to install them. Coverdisks are incredibly simple to use, and if you're a first-time user then don't worry, just follow these brief, but informative, instructions on how to get the most from your *Amiga Format* Coverdisk.

1) FORMAT A DISK OR TWO

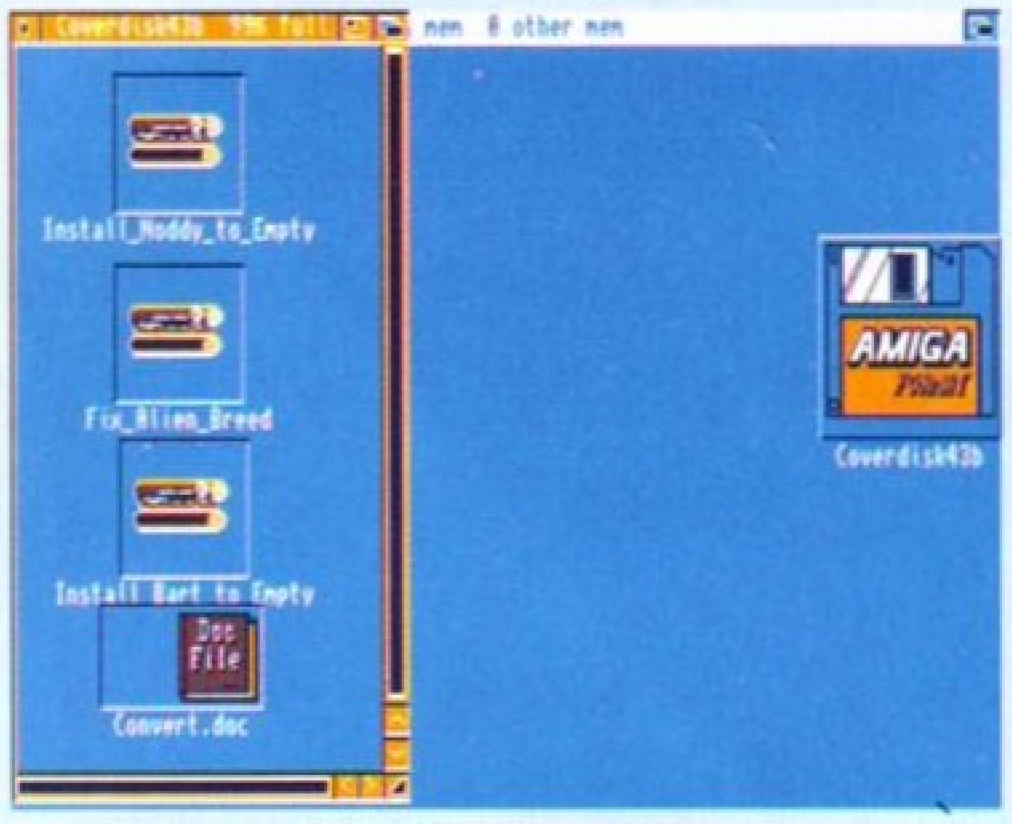


This is Workbench 2 formatting a disk, but every version of Workbench should be fine for this method.

There are a dozen ways to format disks – this one works on all Amigas. To format a disk so that it's ready to install a demo on, load your Workbench disk that came with your Amiga. Then double click through the disk until you find a Shell or CLI icon – if they're not obvious you can usually find one in the System directory. A window will appear – just type this and press Return:

```
Format Drive DF0: name Empty
```

The DF0 bit is DFZero, not DFO as in Oh. Don't mix your letters and number, it upsets computers. The computer will then ask you to insert a blank disk to format (blank 3.5-inch disks are widely available from computer shops) and then press Return. The disk is formatted. If you want two blank disks, type the Format line again – but first write-protect the Workbench disk if it isn't already.



Double click on either of the Install icons - they should work fine one after the other.

2) START THE COVERDISK

Remove all disks and either turn your Amiga off, or reset the machine (just press Ctrl and the two 'A' keys either side of the space-bar). Then insert the Coverdisk into a disk drive. After a short while, and a few warnings to write protect your Coverdisk (always a good idea) you will be left on a screen called the Workbench. Move the mouse pointer (over to the Coverdisk icon and click twice rapidly with the left mouse button. Then double click again on either the Install_Bart_to_Empty icon or the Install_Noddy_to_Empty icon.

3) ONE DISK SWAP

If you have Workbench 3, then wait for the Disk Masher message to put in a blank disk and press Return, and simply do it – the strange messages are irrelevant to you. Everybody else (the majority) should wait for the box asking for the Coverdisk back, take out the Coverdisk, put in a blank and click on the Cancel box.

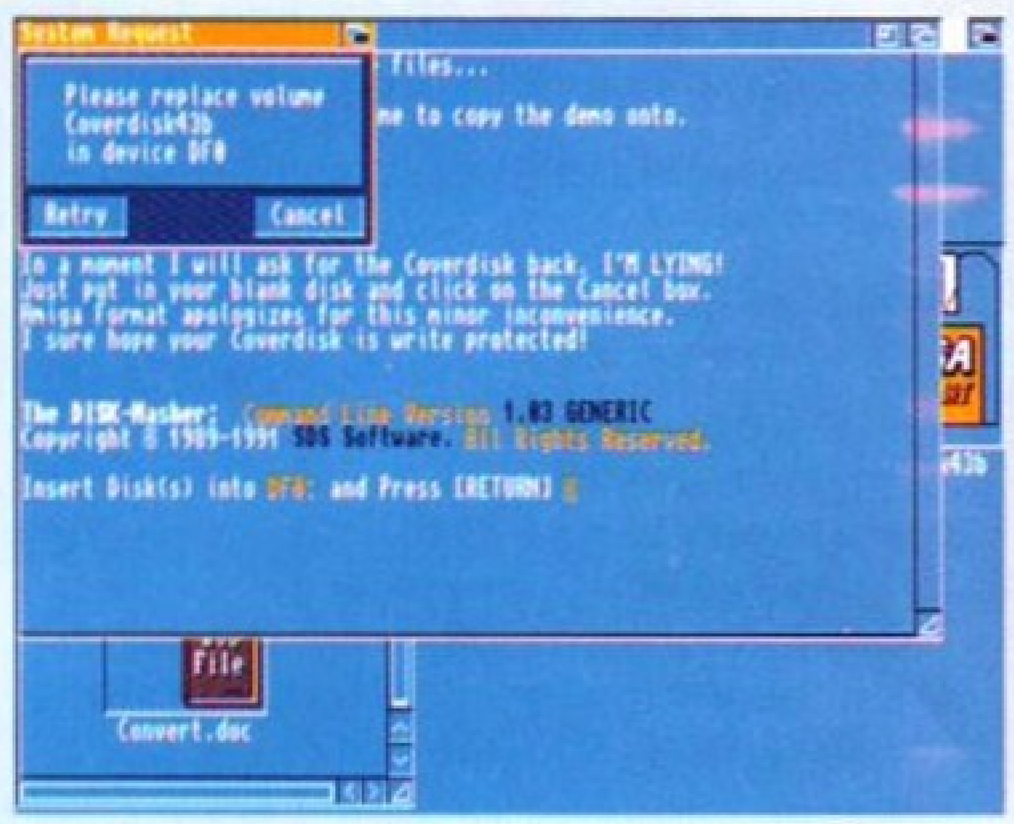
This is why you were warned to write protect the Coverdisk – if you don't, and also ignore the warning messages, you have just wiped your Coverdisk. Never mind, you did make a backup – didn't you? The Install program does not require you to swap between the Coverdisk and the blank disk, and takes about three minutes to make one demo. The words 'All Done' will appear and you will be returned to Workbench .

If you are very, very unlucky then you might get a DMS error code. If you do then please return the disk together with return postage and a note saying 'this disk was not duplicated properly - please replace it' to Disc Copy Labs at the address on Page 10. Don't worry though, only a minute percentage of our Coverdisks have errors.

4) ER, THAT'S IT

And there you have it, a simple procedure for getting demos off the Coverdisk. Once you have made the demo disks, they will 'autoboot', that is start working immediately when inserted into a reset Amiga.

Future Coverdisks will probably use this or a better method in order to get more on to the disk. It's a necessary procedure – *Bart* or *Noddy* fit on to one normal automatic disk, not both. Previous attempts at this sort of thing have met with varying degrees of success, but you should find that the Coverdisk becomes much easier to use from this point on. Oh, and by the way, I hope you had a good Christmas.



Everybody, put in a blank disk. A1200/A4000 users press Return, everybody else click on Cancel.

ALIEN BREED FIX

TEAM 17 PAL/NTSC

Just got hold of the rather excellent game *Alien Breed Special Edition*? Does it crash when you get on to the later stages of the game?

If so, you've got one of the early production disks which contain a bug – that's why the game crashes. Luckily, the Alien_Breed_Fix on the Coverdisk will correct the bug on the second (data) disk allowing you to complete the game without any hitches.

It really is very easy to use. All you have to do is switch on your Amiga and insert the Coverdisk. Then, when a Workbench screen appears, double click on its icon, and again on the Alien_Breed_Fix icon.

The fix then runs, and asks you to put in the data (second) disk from the game. Click the left mouse button to fix it, and the right mouse button to exit the program and get back to the Workbench screen.

Noddy's Playtime

JUMPING BEAN COMPANY PAL/NTSC

WELCOME TO A preview version of *Noddy's Playtime* – a creativity and entertainment package based on solid, educational principles for three-to-seven year olds! This is a fully functional demo of two of the 10 programs which make up this amazing package. The two demos are *Noah's Ark*, a jigsaw game, and *Noddy's Paint Pot*, a simple drawing program.

A time-out of five minutes has been introduced into these programs for this preview version. The full version of *Noddy's Playtime* also includes; *Railway Station*, a memory game; *N & B Works*, observational game; *Chimney house*, musical fun; *Farmyard*, animal matching; *Market Place*, letter and word recognition; *Post Office*, counting and arithmetic skills; *Police Station*, a maze game; and a driving menu which links all of the games together and allows children to take control of Noddy's car and explore Toytown.

USING NODDY'S PLAYTIME



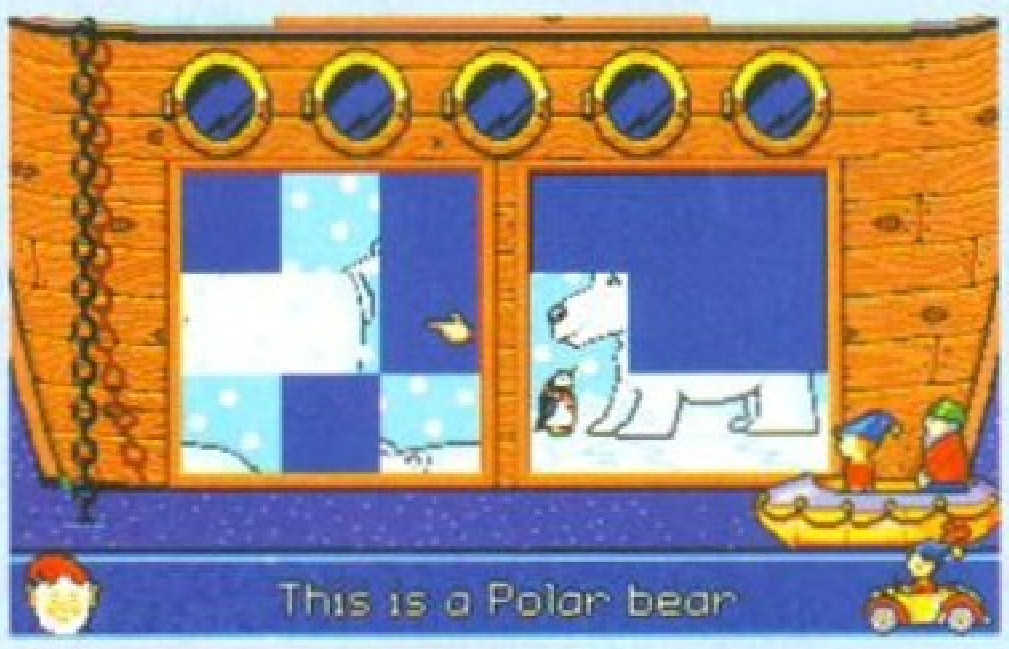
The demo contains only two activities to choose from – the real program contains about 10.

First, you have to make a demo disk from the Coverdisk. You can then load the preview version of *Noddy's Playtime* by inserting the demo disk into the internal drive and resetting. You will soon see an Introductory Screen. In the preview this contains two icons – by clicking the one with an ark you will load *Noah's Ark*, by clicking on the icon showing Noddy holding a paintbrush you will load *Noddy's Paintpot*.

You can control this preview using the mouse, a joystick or from the keyboard using the cursor keys. Once you have played a sequence of five games in *Noah's Ark* or after five minutes in *Paint Pot* the program will return to the Introductory Screen. Should you wish to return to this screen before this time you should press Esc or click on Noddy's car (found in the bottom right-hand corner of the screen).

NOAH'S ARK

This demonstration presents you with the second level of this activity. The release version operates on three different levels and contains many more puzzles. This version contains five puzzles. In the window on the left of the screen are the jumbled pieces of a jigsaw puzzle.



Noah's Ark is very simple - just arrange the pieces properly. Click on Big Ears if you get stuck.

When placed together in the correct order these will make a picture of an animal. To do this you should pick them up, one at a time, and place them into the window on the right.

Move the hand over a piece (using the mouse, the cursor or keypad keys) and click on the left mouse button or press Return. Now move the piece into its correct position in the window on the right and put it in place by clicking on the left mouse button, or pressing Return. If you place a piece in an incorrect position you can pick it up again and put it in a new position in either window.

If you want to check that you have placed any of the pieces of the puzzle in their correct places then you can do so at any time just by clicking on the Big Ears icon. If all of the pieces which you have placed are in the right places, Big Ears will nod his head. If any are in the wrong places, he will shake his head and those pieces will be returned to the left window. On level one there are four pieces in each puzzle. there are nine pieces in level two and 16 in level three.

NODDY'S PAINT POT

Noddy's Paint Pot is an art package which has been designed so that even the youngest child can enjoy it. It contains most of the major functions found in dedicated art packages, so it will give children the confidence to use such utilities at an early age.

Noddy's Paint Pot is presented on two screens: the Drawing Screen is the active drawing area. By selecting a drawing function (from those represented by the large icons in the centre of the Menu Screen) the screen will rise to reveal the Drawing Screen. To return to the Menu Screen children should click on the right mouse button or press the space-bar. When on the Drawing Screen, each of the functions are controlled by pressing the left mouse button (or Enter or Return) to start and repeating this operation to stop it.

The left mouse button must not be held down while children are attempting to draw, this will have no effect. The is because young, small, hands find it difficult to hold down the button and draw at the same time.



The drawing screen of *Noddy's Paintbox*: kids will have hours of painting fun with this demo.

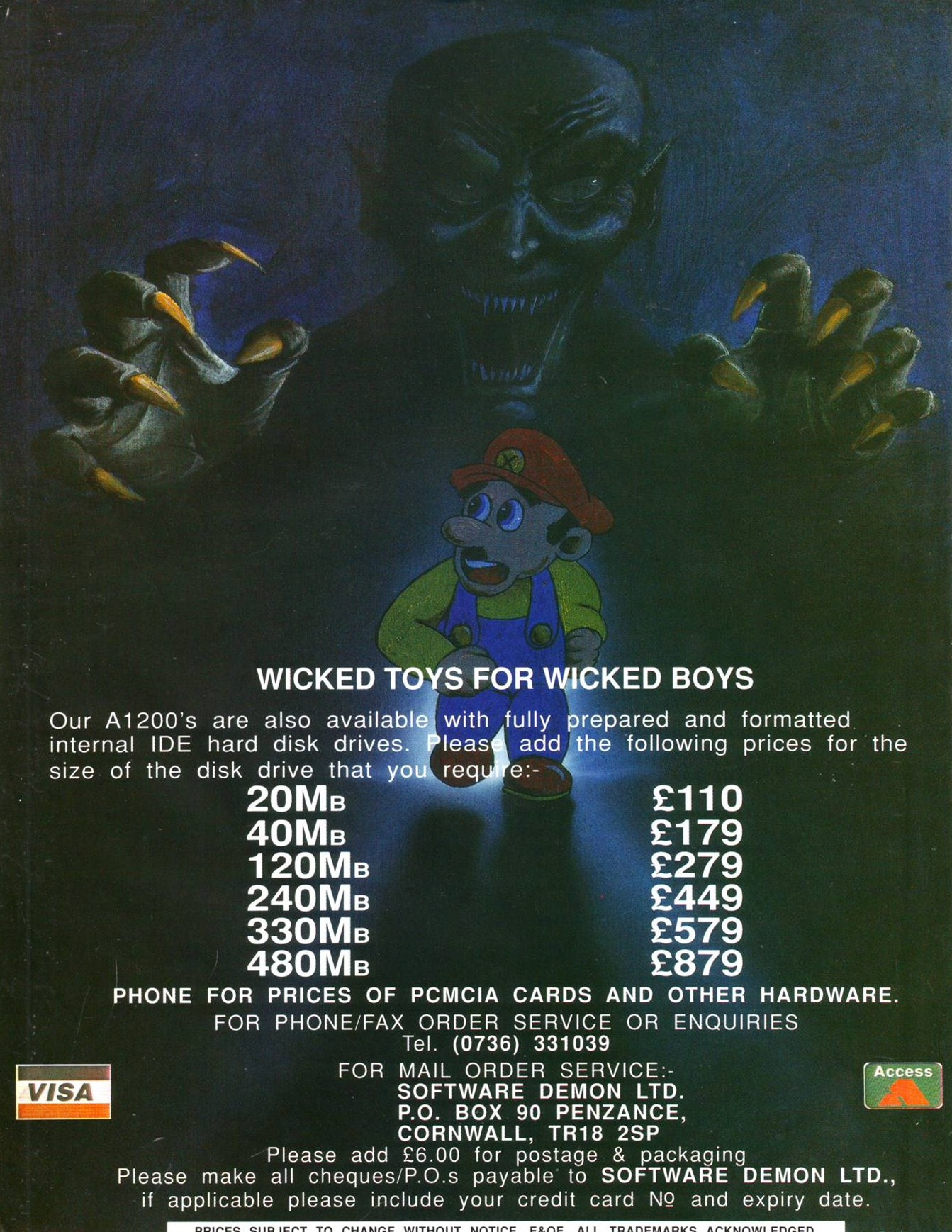
The active colour can also be altered using the Colour Strip on the Drawing Screen. Additionally, a fill pattern function is available which uses the currently active pattern. This can be changed by clicking on the arrows either side of the pattern selector box on the top left of the Menu Screen.

Noddy's Paint Pot contains a number of characters and objects which can be pasted on to various pictures. These can be scrolled through by clicking on the arrows that are either side of the selection strip. If children click on any of the three visible objects or characters the program will move to the Drawing Screen with that object selected. This can be pasted anywhere within the picture by clicking on the left mouse. Happy painting!

HOW TO CONTROL .....

The menu screen contains the various icons from which this program is driven...




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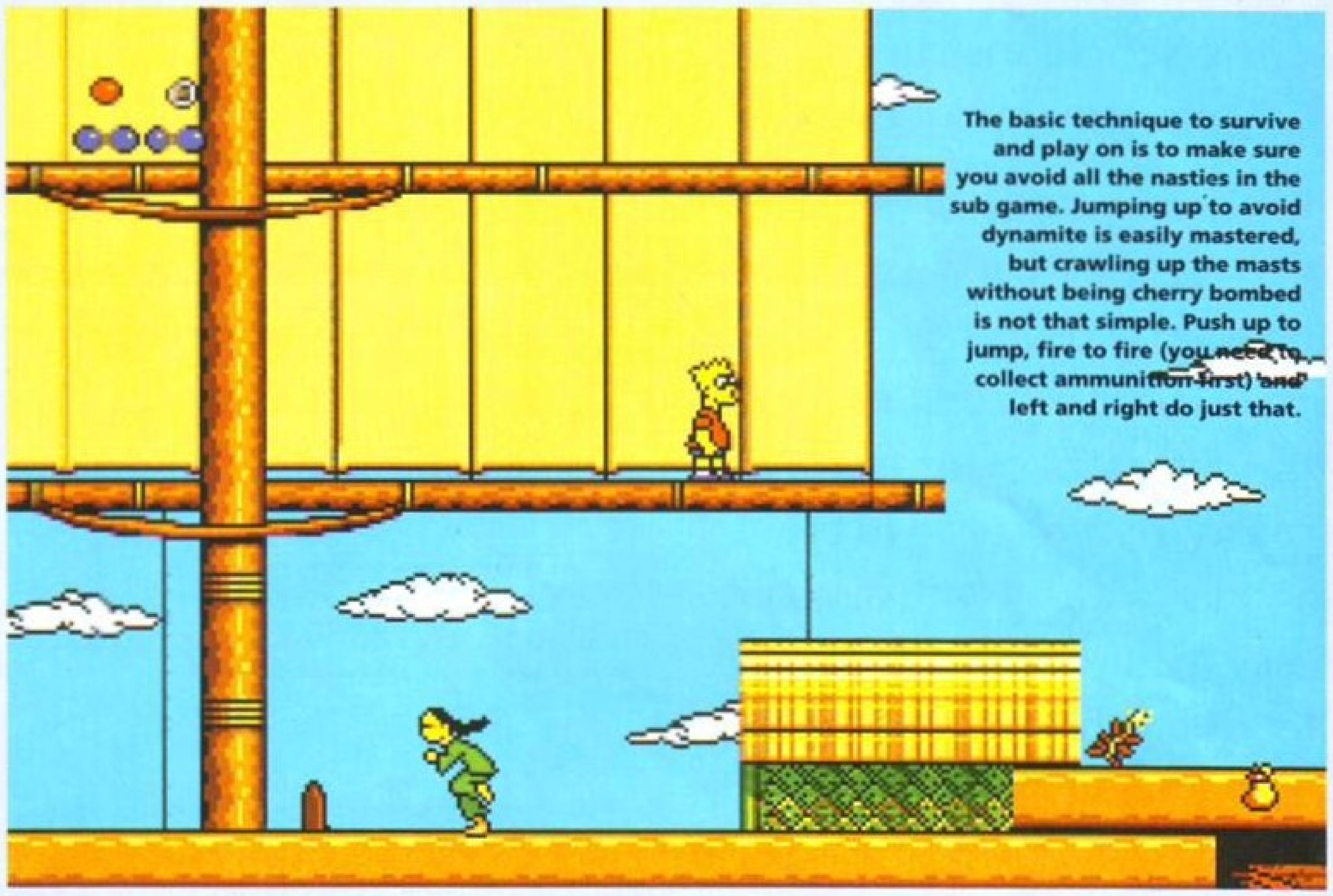
Bart Simpson VS The World

ACCOLADE PAL/NTSC

THIS IS A demo of the latest Simpsons release from Accolade, this time Bart's taking on the world. The game revolves around an ill-considered foreign holiday by Homer Simpson and his family. The Coverdisk demo features just the Chinese sections of his world tour (check out the background for Bart: it's anything but straightforward). There are various sub games, some of them are very simple, others that are less so. Bart has to step in to solve the puzzles, outwit the opponents and generally save the day.

To get to the Bart demo, you have to first make a Bart disk. This is not too difficult, and should take between five and 10 minutes at the very most. See Page 7 for the exact details – once you have made a Bart disk, simply reset your Amiga and put the Bart demo disk into the disk drive. The demo will then automatically load.

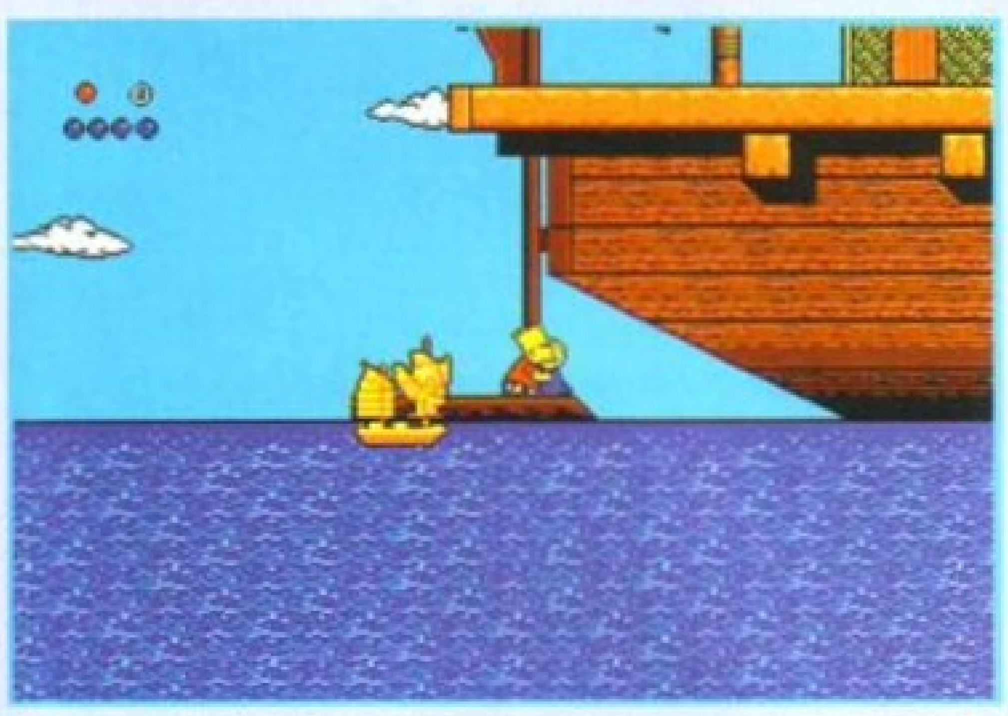
You control the Bart character by means of a joystick. First, press fire to get off the title screen. Then you must select which of the five mini games you want to play. Only two of the games have obvious arcade roots - most of the games are puzzle-like and don't need fast reactions. So get going and press the fire-button to confirm your selection.



The basic technique to survive and play on is to make sure you avoid all the nasties in the sub game. Jumping up to avoid dynamite is easily mastered, but crawling up the masts without being cherry bombed is not that simple. Push up to jump, fire to fire (you need to collect ammunition first) and left and right do just that.

ONE SMALL THING...

There is a bug in this demo, in the Great China Wall section. If you take a bad fall (hit a dip too fast) then the game will just stop. If, however, you do not hit any obstacles then the stage can be easily completed. Both *Amiga Format* and Accolade apologise for this bug, and don't worry, it won't be in the final finished product.



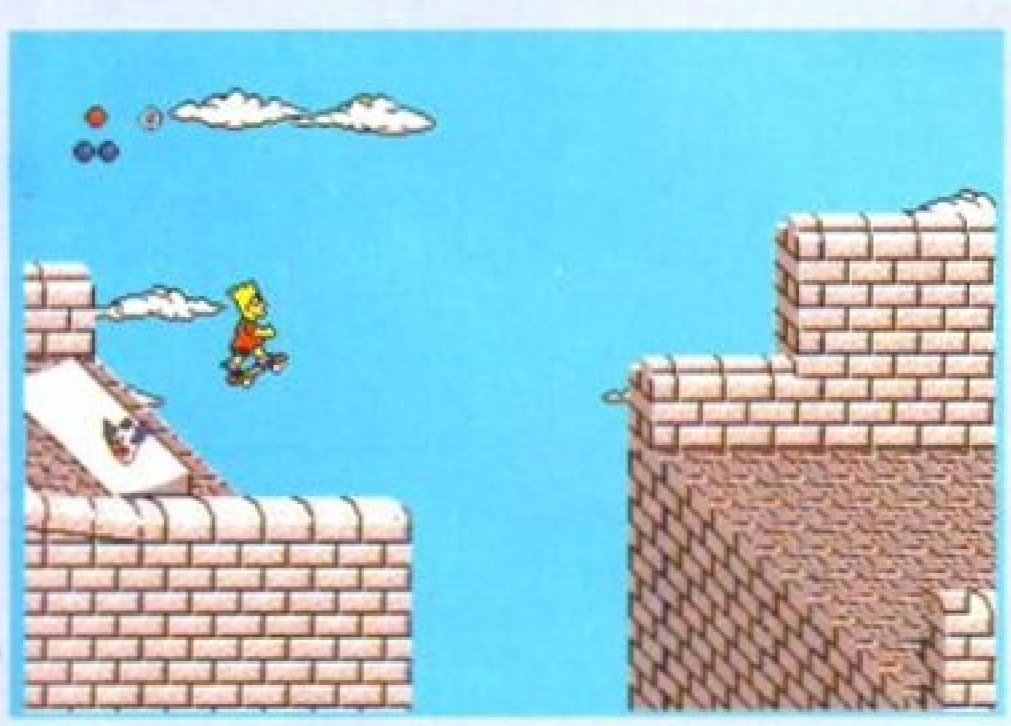
If you try really hard, then you can get down to this rudder section where you find Maggie, Bart's sister. It may then be possible to escape this level if you manage to acquire enough points – sadly it's never managed to work for me though. Crawling up the rudder is the best way to go.



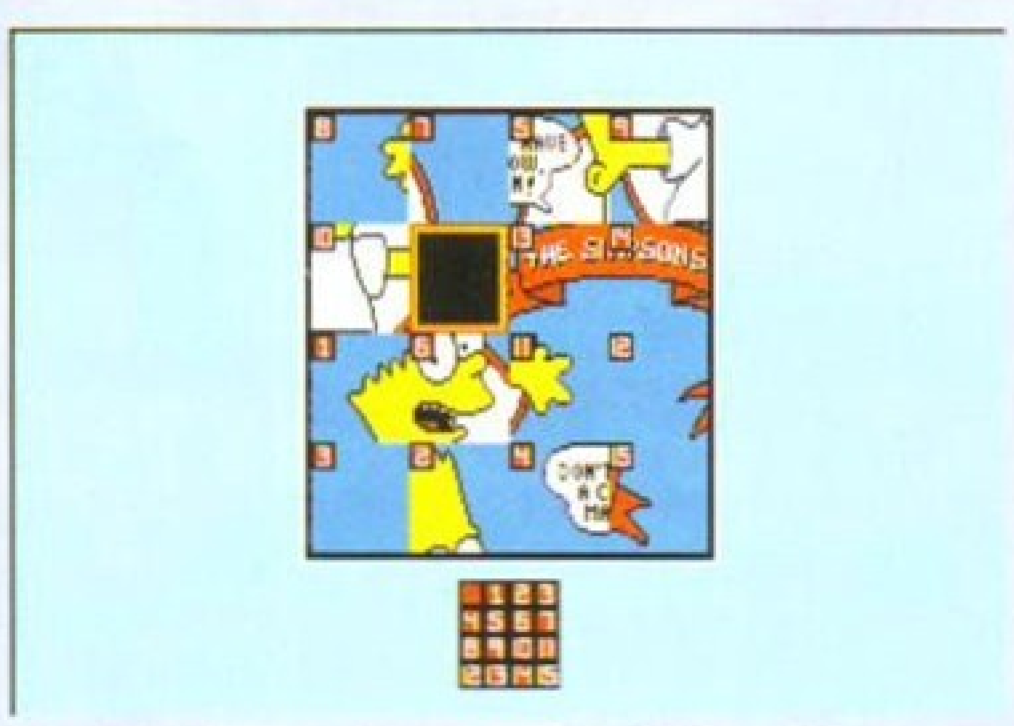
This is a very simple game – simply move the joystick and press fire to select two cards. If the cards do not match, you lose an attempt. If they do match, your number of attempts stays the same. You have to be both lucky and skillful to get all the pairs before you run out of goes.



This is the simplest sub game of all, so no excuses for not being able to complete this one – just press fire to stop one of the reels spinning and try to get a win. It's quite skillful, but once you know the reels it becomes a bit repetitive.



This is my favourite part of the demo. You have to guide Bart's skateboard down the wall, avoiding obstacles, meandering oriental types and a rather nasty fire-breathing dragon. If you hit too many obstacles, Bart can stop and the game hangs – apologies for the bug. The course is easily completed with a little practice.



There's just no way I can complete this, but this sort of puzzle has always confused me. Use the joystick to select which block you want to move, and press fire to use it. Simple in theory, the puzzle is very difficult to rearrange correctly.

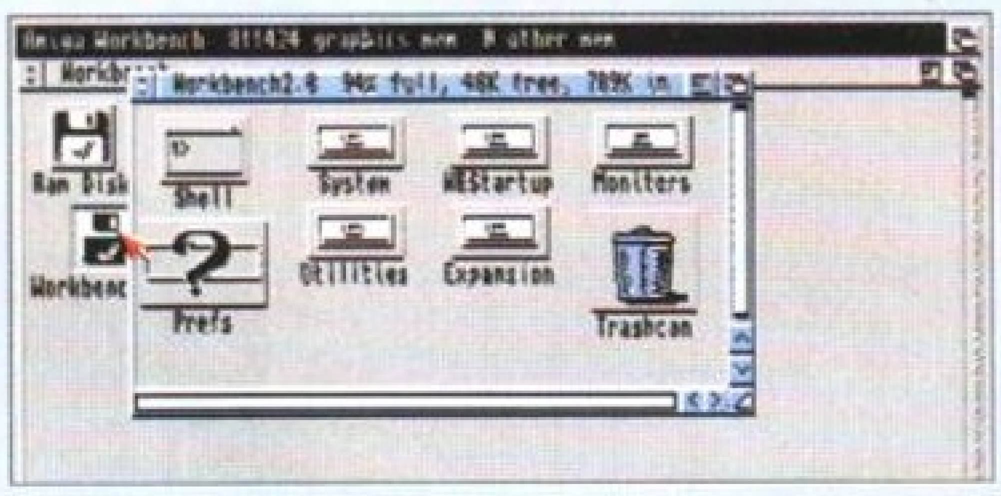


Using Your **Coverdisk**

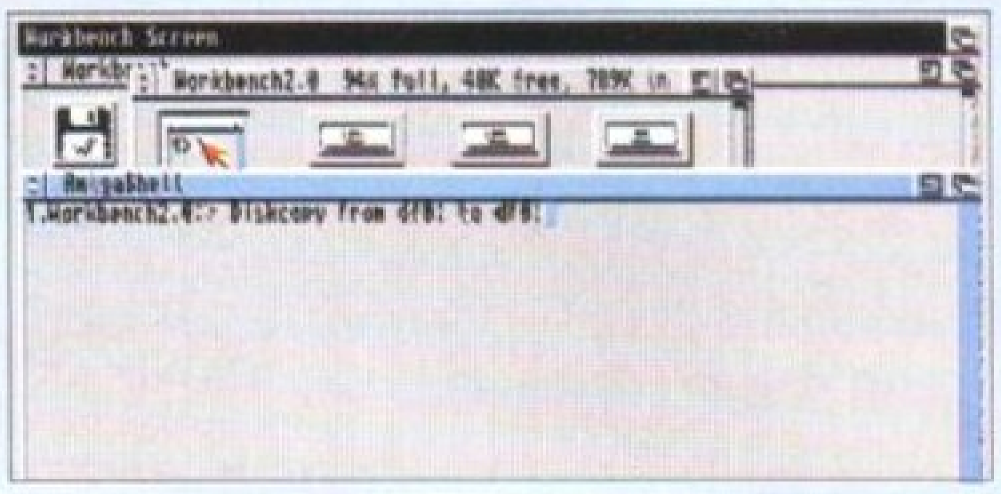
1. Always write-protect your Coverdisk. Move the tab so a hole is showing.
2. Copy the Coverdisk and use the copy, not the original. This may sound like a complicated task, suitable only for techno buffs, but it's surprisingly simple to do, just follow the simple instructions for copying the disk which are given below.
3. Read the instructions when using the programs.

Backing up your Disk

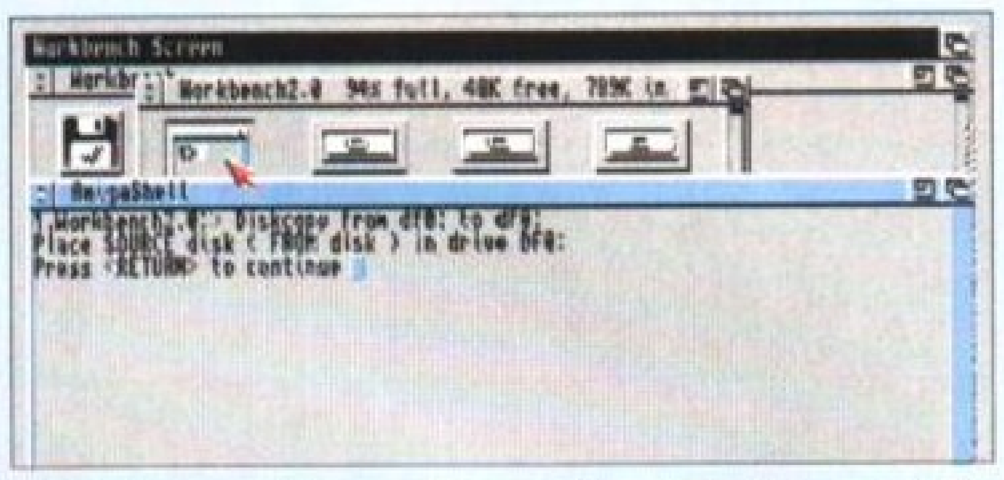
There are two ways of making a copy of your disk, and this is the easy one. Don't be daunted by the fact that you need to use the Shell or CLI: it's actually a lot easier than you might think. Just follow these simple steps…



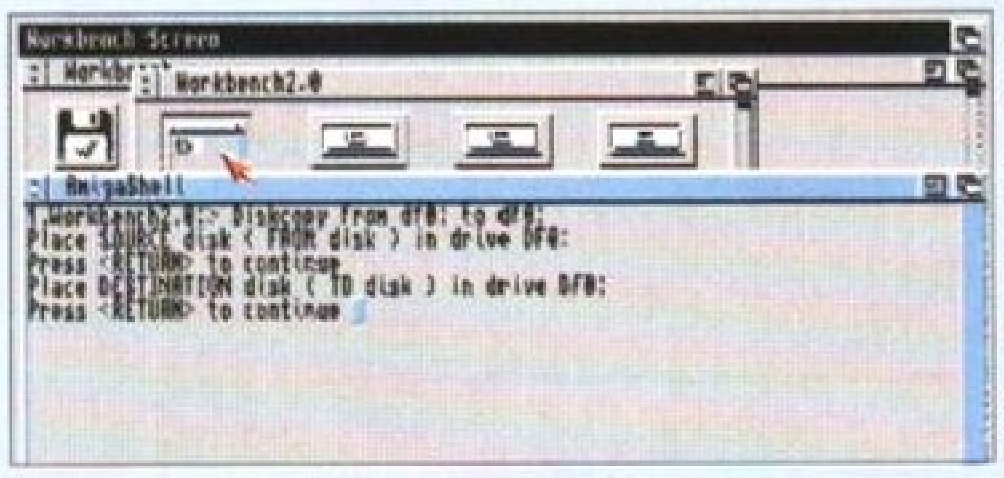
1 Load your Workbench disk. Open the disk, find the icon that says Shell or CLI and double-click on it.



2 When the Shell window appears and the drive light is out, type in:
`Diskcopy from DF0: to DF0:`
and press the Return key.



3. The Amiga will now ask you to insert the 'source' disk. It means the disk you want to copy, so put the Coverdisk in the drive and press the Return key.



4. Wait for a while and it will read all the information off the Coverdisk, telling you how far it has got. Then it will ask you to insert the 'Destination' disk. Put the disk you want to copy your Coverdisk on to in the drive and press the Return key. Note that the disk does not need to be formatted already.



5. Put the source disk and destination disk in a couple more times when the Amiga asks for them. When it says "Diskcopy Finished" just type in:
`endcli`
to get out of the Shell or CLI. You may have to put the Workbench disk in again. Now your copy is ready!

DISK PROBLEMS?

If you have a problem with the disk – and you're sure the disk is in full working order – then you may need a little help. If you ring us on any Tuesday, and ask to speak to Pat McDonald, he will do his best to help you. Please understand, giving this sort of advice is time-consuming and we are very busy people, so only call if you really have to and do be considerate if we can't talk to you just then. If the problem is particularly complex it is better to send it to us in written detail. It will then be dealt with in the Workbench pages of the magazine.

BE CAREFUL!

We have done our best to check that all of the programs on the ***Amiga Format*** Coverdisk are simple to use and have no viruses. We cannot usually answer complex telephone queries on the software (see the Disk Problems? box) and we do not accept liability for any consequences of using the numerous programs that are on the disk.

COPYRIGHT

Unless it is specifically stated, the programs on the Coverdisks are not in the Public Domain and the copyright remains with the copyright-holder of the program.

Because some of the programs on the Coverdisks are not PD, selling or distributing them without the copyright-holder's specific permission is against the law.

Disk not working?

We duplicate nearly 500,000 disks every month. Out of all those, obviously a few will be faulty. If the disk or any of the programs will not load or run properly, there may be a problem. Don't panic!

First try using the *DiskDoctor* utility on your Workbench disk to rescue it before sending it off for a replacement. In-full details of *DiskDoctor* can be found in the user's manual that came with your machine.

However, if your Coverdisk is in fact faulty, you should send it back INCLUDING A STAMPED, ADDRESSED ENVELOPE for a free replacement within one month of the cover date to:

Amiga Format February Disk
Disk Copy Labs Ltd
Units 2&3
Omega Technical Centre
Drayton Fields
Daventry
Northants
NN11 5RT

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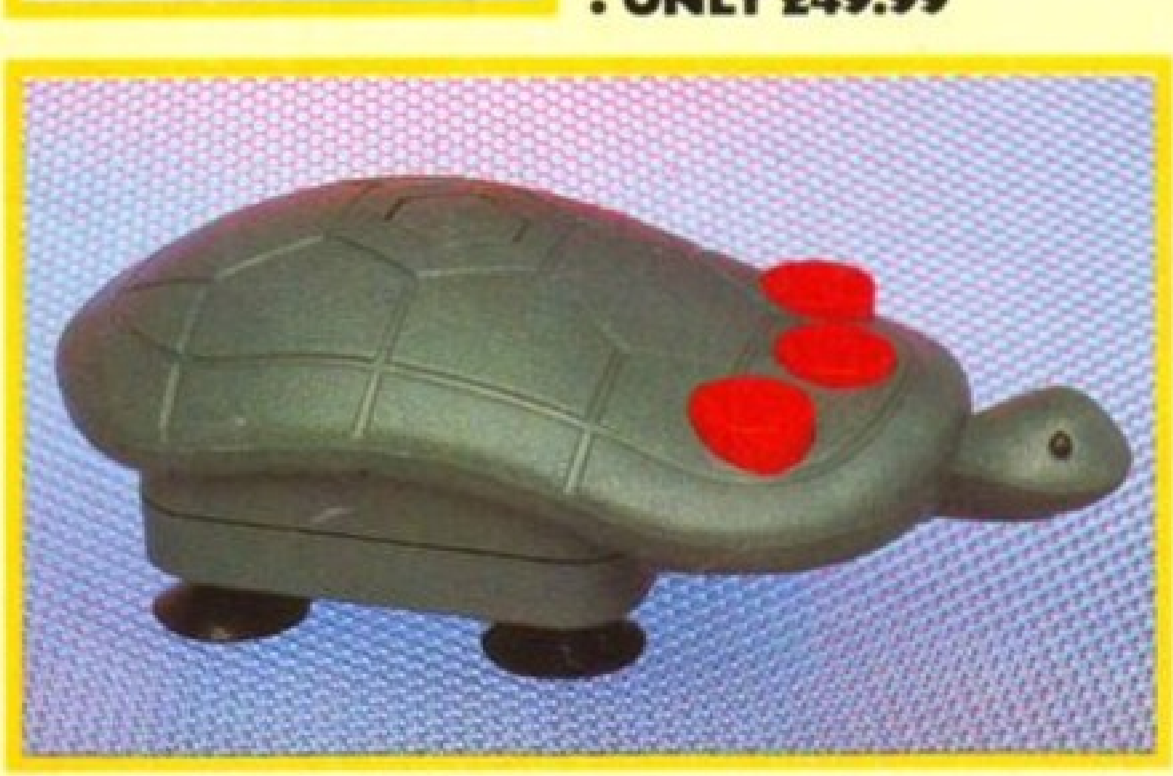
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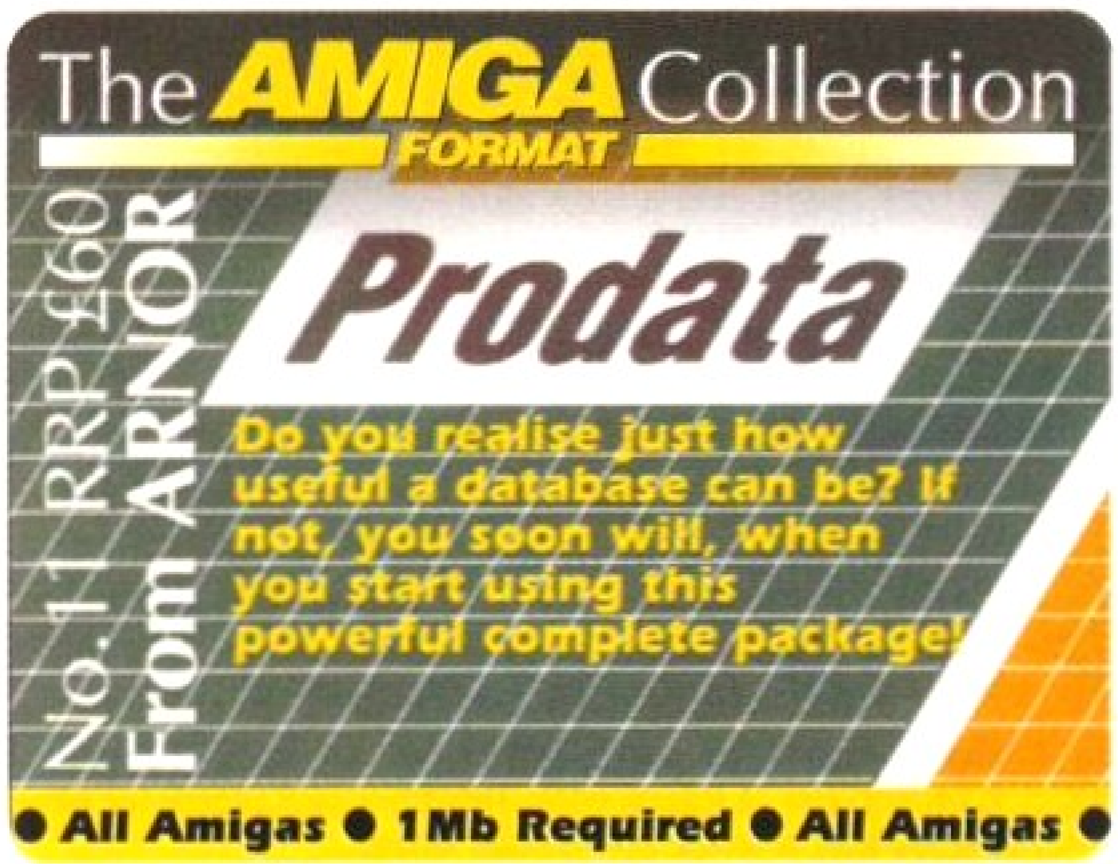
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Prodata

Classify your things; that's the message from **Amiga Format** this month. So join **Andy Hutchinson** as he guides you through the wonderful Prodata database program and still manages to say: "Now where did I put Vanessa's address?"

GETTING STARTED

Insert the disk in your Amiga. The Amiga Format coverdisk logo will appear just as shown above. Double click on this icon and a window will open showing two files. Double click on the PD Config file and follow the installation procedure. Make sure that you back up your disk first; turn to Page 10 and follow the instructions there.

THE PROBLEM WITH things is that they tend to get either lost or mixed up. Records go missing, prized comics get thrown out by mums, valuable stamps end up on envelopes, butterflies get eaten by small children, safari parks go bankrupt and as a result people end up getting frustrated. The loss (either temporary or permanent) of things accounts for more human suffering than either oil or religion. Thank God then for databases.

Databases enable you to store information about things. They then enable you to sort that information in any number of wonderful ways and this then allows you to hunt quickly for individual snippets of information. Databases are really wonderful programs because while they won't stop you losing all those things in the first place, they will enable you to keep track of your valuable collection, be it record or invaluable phone numbers.

Study the form

Once you've installed *Prodata* on hard drive (see Page 16) or floppy disks you can run the program and start creating your first database. Double click on the *Prodata* icon and the program will start up. The first order of the day is to actually set up your database and to do this you'll need to think about your needs.

Let's say that you've decided to have an address book. The information you're likely to want to include within the database are things like: name, street, town, telephone number, company and comments. With this kind of information stored within your catalogue you will be able to search for people according to any of those classifications.

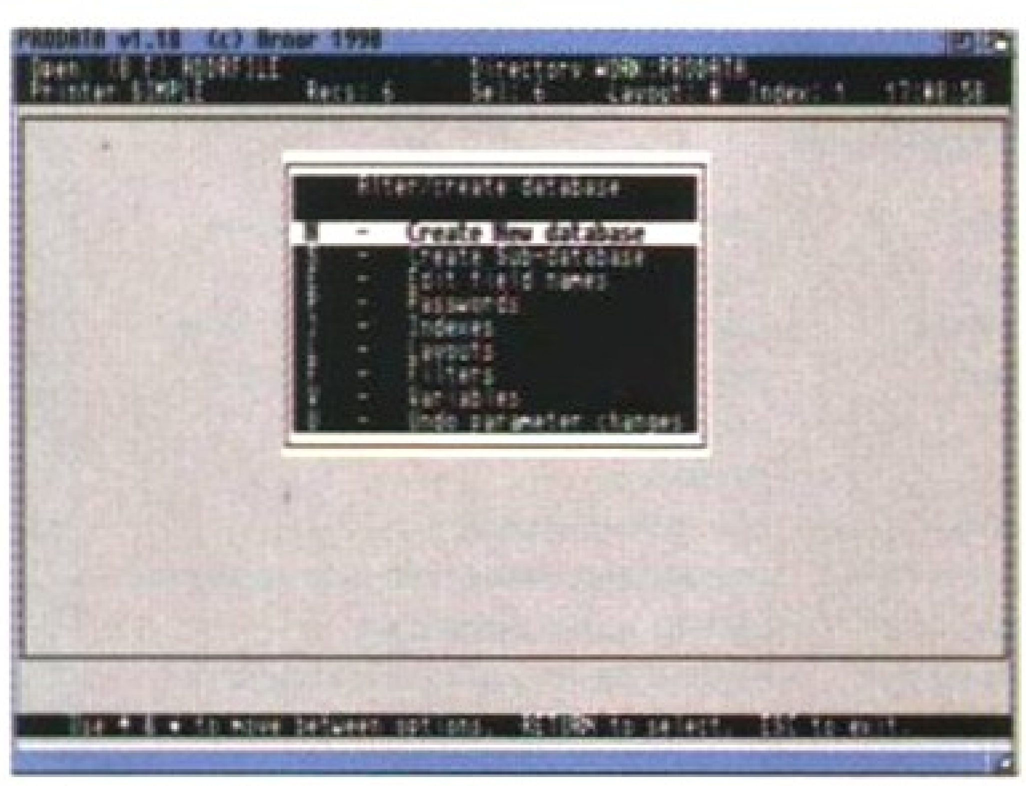
This is the beauty of the database. If you stored all your information on cards you'd have to trudge through each and every one of them looking for the appropriate pieces of information. If, for example, you needed to know the names of all your friends in a certain town you could do it extremely easily.

So, we've decided what we're going to catalogue and what aspects we want to include about all the individual items within that catalogue. The next step is to actually create your database from scratch and set up the card template into which you'll insert all the pertinent information.

On the *Prodata* Coverdisk you will find a file called 'addrfile.pfd'. Insert the *Prodata* disk and then click on Open database by moving the bar up and down with the cursor keys or by pressing O. Now just press Return and a catalogue of all the files and directories on your disk will appear. Choose the demo file 'addrfile' by pressing Return when the black menu bar is over it.



So! What does Vanessa Paradis have to do with databases? Well imagine you had her address, would you want to write it down where anyone might discover it, or would you try and memorise it, and risk forgetting it? Far better to store it safely in a computer database, where you can protect it from prying eyes with a password. By the way if you do have Van's address (or even just her phone number) send it to us and win an extra-special prize.



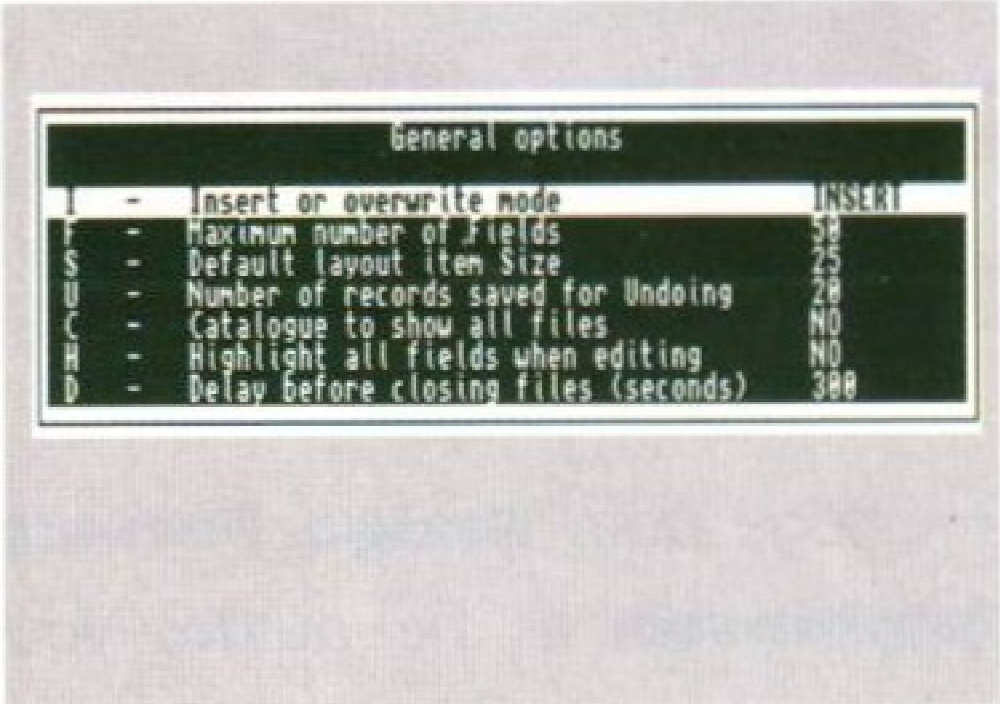
Choose the Alter/create database option and click on the Edit field names item. You should see eight items labelled Field 1 – 8. Fields are the individual classifications used for that particular catalogue.

Choose the Alter/create database option and click on the Edit Field names item. You should see eight items labelled Field 1 – 8. Fields are the individual classifications used for that particular database. So in our example one of the fields covers surnames and one telephone numbers. You can have an almost unlimited number of fields within each of your templates but it's best to keep things as simple as possible.

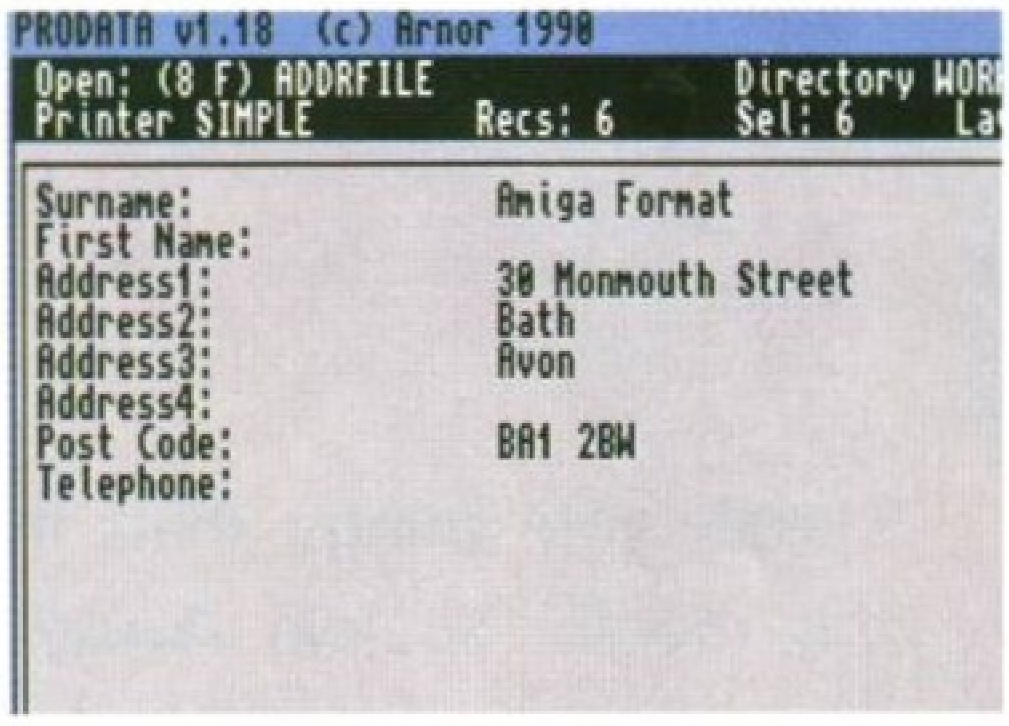
Reach out and classify somebody

Hit the Esc key twice and you'll get back to the main menu. Hit the D key to enter the Display/edit records

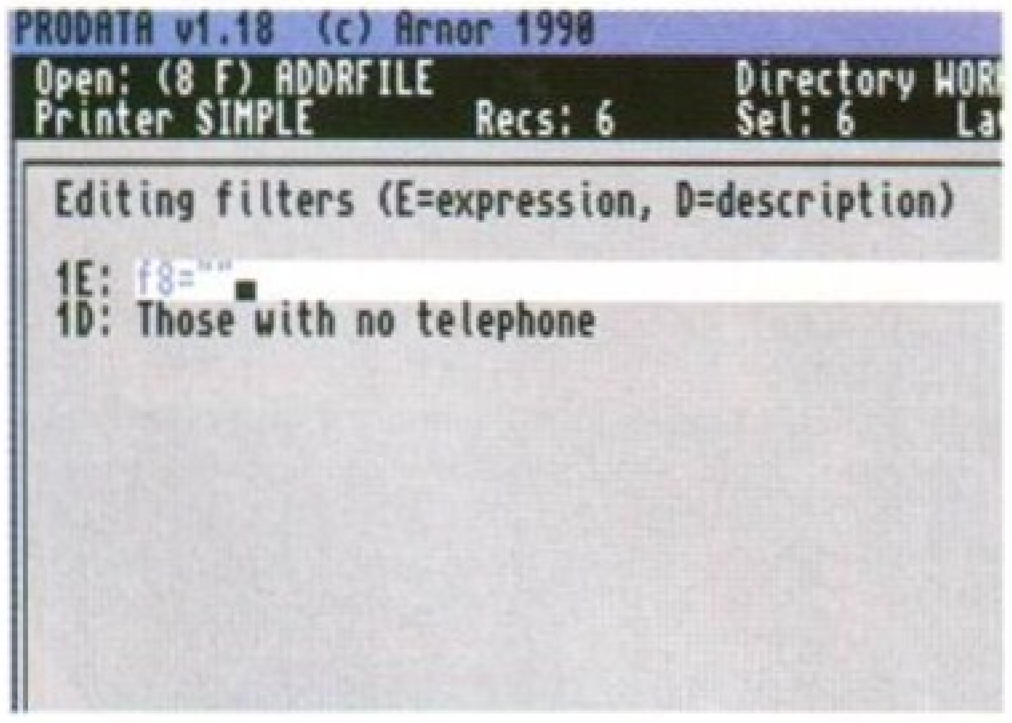
Continued overleaf



The General options page enables you to set global parameters which determine how the catalogue behaves. Most important option is the maximum number of fields.



Using the demonstration database which is included on the disk, you can enter new names and addresses. Here we've entered a particularly fine magazine's name.



The filter option is simply a flashy way of sorting files into a format you're happy with. This filter will search for people without a telephone number entry.

section of the database and you should see the entry for Arnor who created *Prodata*. Click the left and right cursor keys and you'll see entries for other non-existent people.

Click the cursor keys until you see an entry for James Brown. Hit the E key and you'll be able to modify the contents of that card. Move the bar down to the Address 4 field name and type in 'USA' and then hit Esc. That information will be saved to disk automatically by *Prodata*. Every time you make a change like this the program will update the database, there's no need to save the file at all.

Now hit the A key and you'll be able to add your own entry. Type in 'Amiga Format' then press Return twice, followed by '30 Monmouth Street', 'Bath', 'Avon', Return, 'BA1 2BW' and finally '0225 442244'. Press the Esc key and this new card will be saved to the address book file.

Let's say you want to track down an item of information. Obviously, clicking through each card in succession is a tedious and slow method of finding the right piece of information. Press the F key and type in 'Brown'. *Prodata* will search for the appropriate card and display it on-screen. These are the basics of manipulating a stack or file of cards. Experiment with the Display/edit records page and you'll find that it's very easy to zip around your data.

Make an impression

Right, you're now familiar with the basic mechanics of databases. However, it's unlikely that you'll be able to use the demonstration file for all your needs, in which case you'll need to create your own templates. This will enable you to set up the card the way you want it with the fields laid out in a manner suitable for your data storage.

Creating a template is an easy job with *Prodata*. We do suggest, however, that you sit down and work out exactly what you want the cards to read. It's all too easy to get over-enthusiastic about this sort of thing and include fields for all sorts of bizarre information which you won't need. The simpler the card the quicker it'll be both to enter information and to read it.

Call up the Alter/create database option by pressing the A key and then click on the Create New database option by pressing N. Give your database a name, press Return twice and you can now start naming your fields. For instance, if this was an address database you'd type in 'Name'. Continue entering all your fields and when you've finished hit the Escape key.

In order to change the actual layout of the card you need to create your own. Hit the N key and you'll enter the layout-modification screens. If your layout is brand new (and let's face it most of them will be) then you can change global attributes as well. The first option enables you to name the layout (say: Tax Form), the height (how many lines deep the layout will be), the

Key strokes

<——	Move cursor left one character.
——>	Move cursor right one character.
CTRL <——	Moves cursor to start of field.
CTRL ——>	Moves cursor to end of field.
DEL	Deletes the character under the cursor.
CTRL DEL	Deletes all characters before the cursor back to the start of the field.
CTRL-E	Deletes from cursor to the end of the field/text.
CTRL-A	Alternates two characters. 'Teh' can be changed to 'The' by positioning the cursor on the 'e' and using this command.
CTRL-/	Converts the character under the cursor to upper case.
CTRL-\	Converts the character under the cursor to lower case.
CTRL-TAB	Toggles between Insert and Overwrite mode.
CTRL-I	Insert line at cursor position.
CTRL-F3	Deletes line under cursor.

Sorting operators

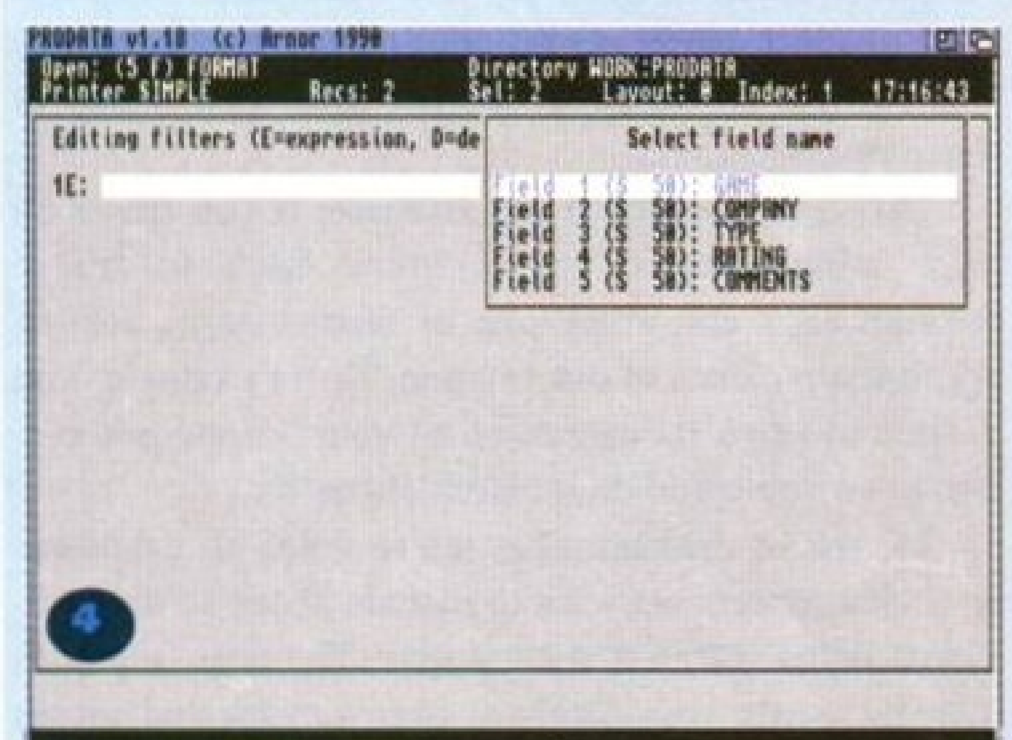
+	plus	lwr	convert string to lower case
-	minus	not	logical negation
!	logical negation	sdate	convert number to short date
~	absolute negation	upr	convert string to upper case
abs	absolute value	*	multiplication
datenum	convert date to number for calculation	/	division
		div	integer division
frac	fractional part of	mod	remainder from integer division
int	integer part of	$+	string concatenation
isdate	test whether string is a valid date	round	round to no. of decimal places
		<	less than
Isnum	test whether string is a valid number	>	greater than
		<=	less than or equal to
ldate	convert number to long date	>=	greater than or equal to
len	length of string	<>	not equal to

Setting up base

Setting up a database is easy, and so is setting up a sort (filter) to check through your database and pick out certain records. Here's how to do both, in just seven simple steps.

When the sort conditions which you've set up are 'run' they create a kind of sub-database with all the special card entries and if you wish this can be saved off into its own file. Thus if you searched for all your friends who lived within a 30 mile radius of your home, you could create a new database called Local Friends.

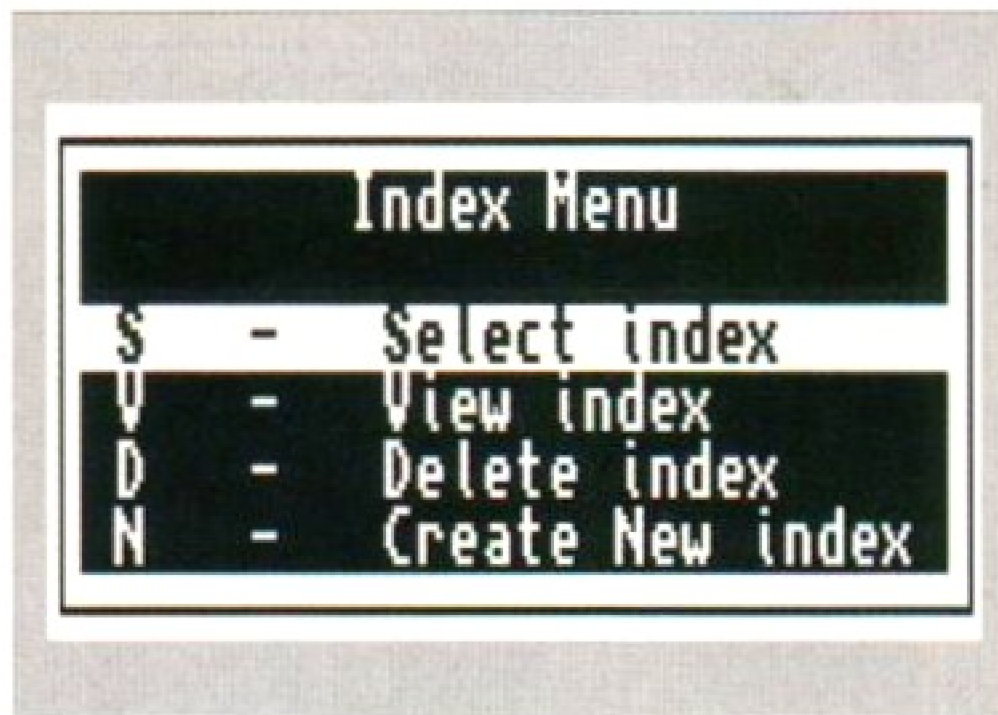
To create a filter, simply click on the field name and then enter a condition. You can chain conditions together in exactly the same way as you chain together formulae in simple equations.



Right, with our database prepared it's time to set up a filter. First we have to select which field it is we want to be filtered.



The index option enables you to control the order in which the cards are displayed. You retain complete control over the index...



What's more you can have any number of indexes stored away on disk for later retrieval or you can create a brand new one.

left margin (how many characters in from the left of the screen the data will appear), the top margin (how far down from the top of the screen the data will appear), the header margin (used when printing to determine the words which appear at the top of each sheet), the footer margin (how far up the screen the text starts), the page length (how many lines long in total a page is), the records per page (used when printing), the attributes set and the protection level. When you're happy with the physical attributes, hit the Esc key and you'll enter the modification screen.

The dashs you see at the top of the screen represent the space which the field takes up. In the bottom left of the screen above the word Field is the name of that field. To add your other field names (address, phone number etc) simply hit the F key. If you like you can draw lines around portions of the fields by using the Line command. When you're happy with it all, hit the Esc key and you can save your layout.

Filtering information

Right, well so far we've found out that databases are awfully good at storing lots of information in the form of cards. We've found out that these cards can be accessed in any particular order we fancy and that actually entering all the data is an extremely tedious job. However there are other ways of reading the information in the database without looking for individual nuggets of information; we can place sections of the database within their own classifications.

This kind of searching for data is one of *Prodata*'s strongest features. Let's say that you have access to the DVLC driving-licence records and that you'd like to find out whose licences will expire at the end of the year. You'd set up a search which would exclude all cards with an expiry date of less than your date. This search group could then be saved off into their own database or simply printed out.

Continued overleaf

That database jargon-busted

DATABASE: collection of cards made up of information arranged in fields.

FIELD: one item of information on a card: name, address or whatever.

RECORD: this the equivalent of one card of information.

INDEX FILE: contains all the details of where each record can be found in the data file and the order in which it is displayed.

CONFIG FILE: contains details of the way you like your database set up. Information such as default directories and screen colours will be found in here.

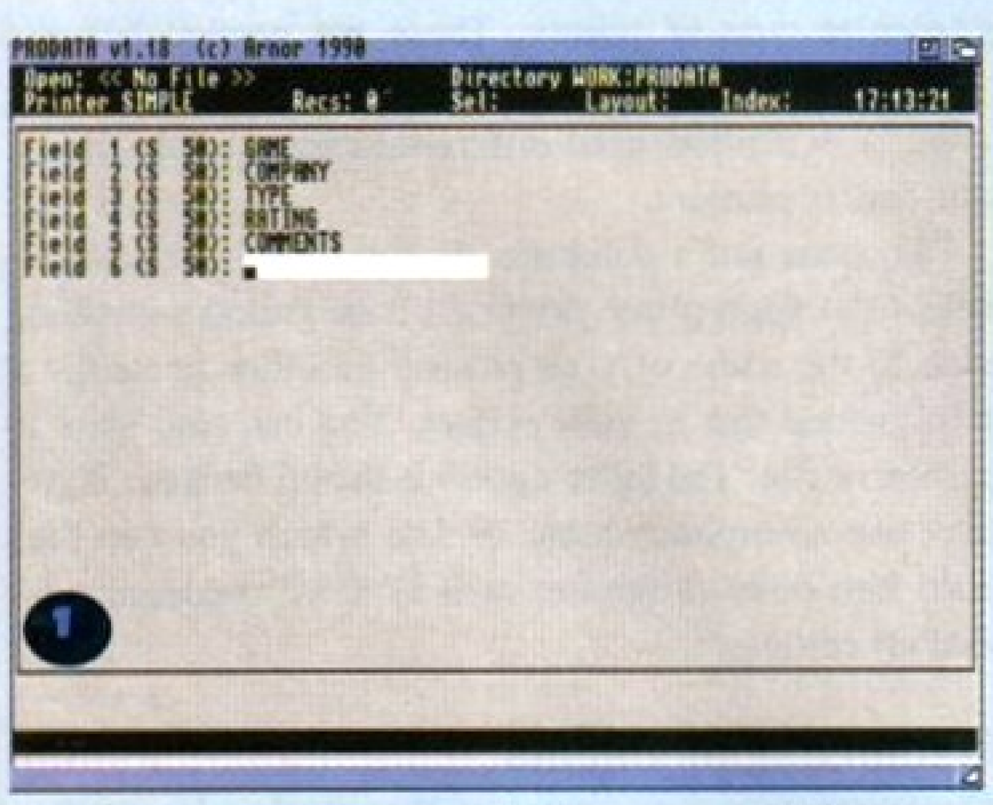
PARAMETER FILE: contains details of the setting for an individual database.

LAYOUT: the physical look of a card in terms of what field goes where.

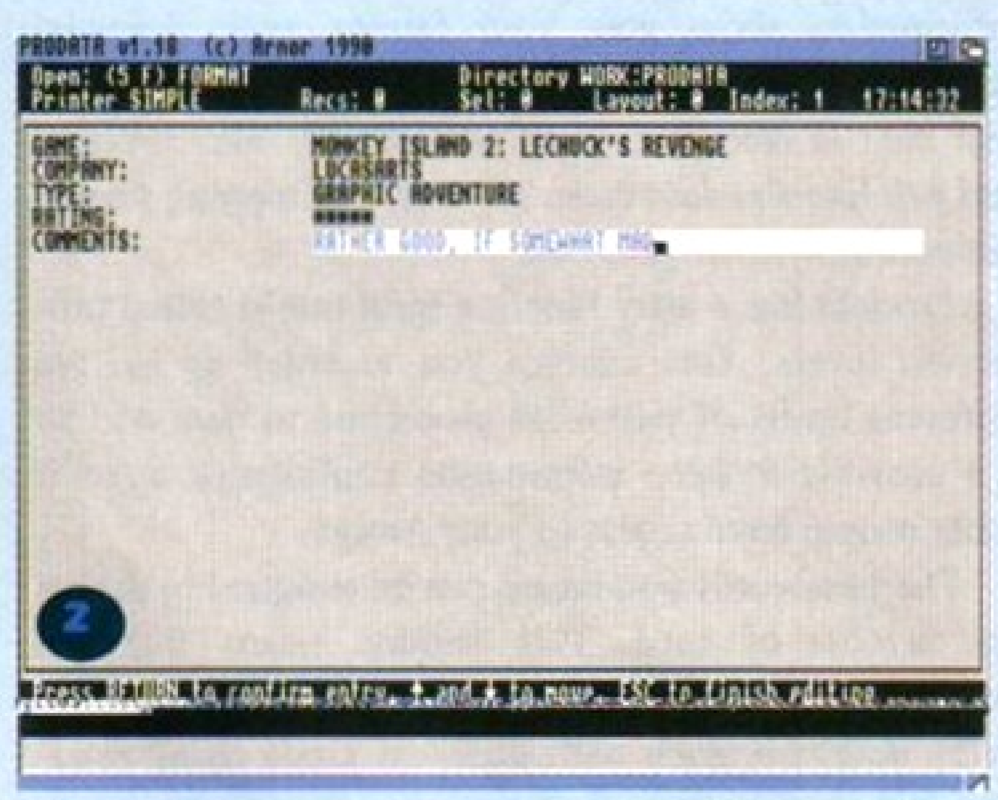
FILTER: condition under which data will be displayed; people with a London telephone number, for example.

INDEX: determines the order in which data is displayed.

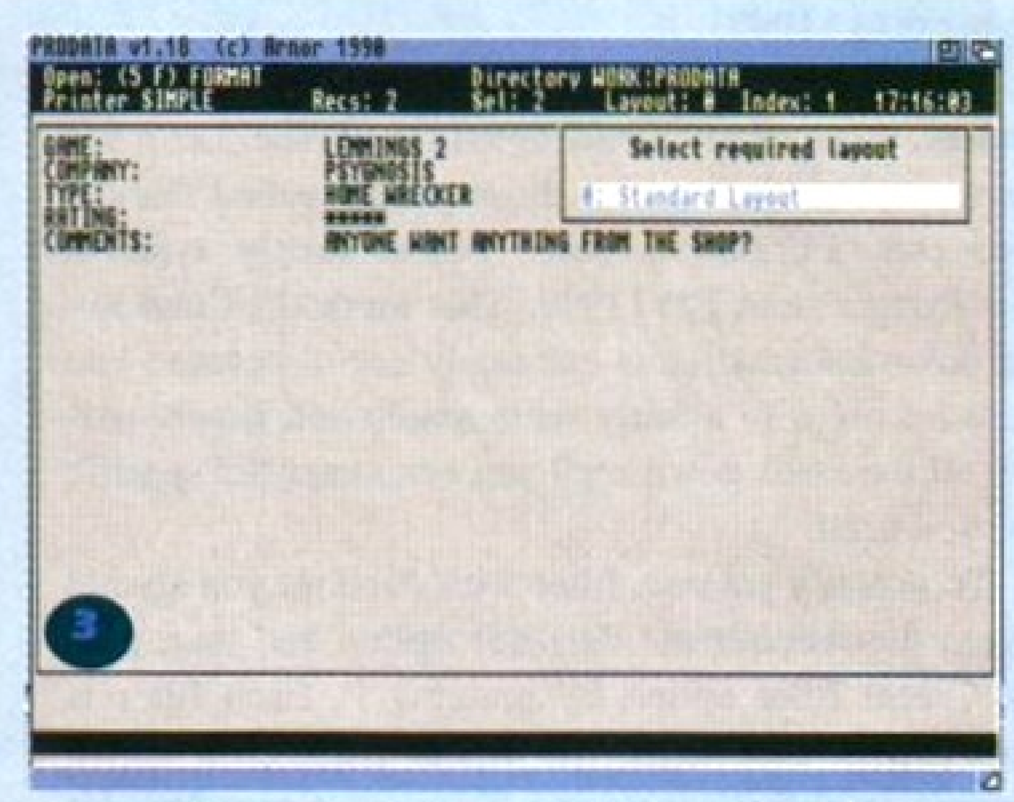
FOMALHAUT: a first-magnitude star in the constellation of the Southern Fish.



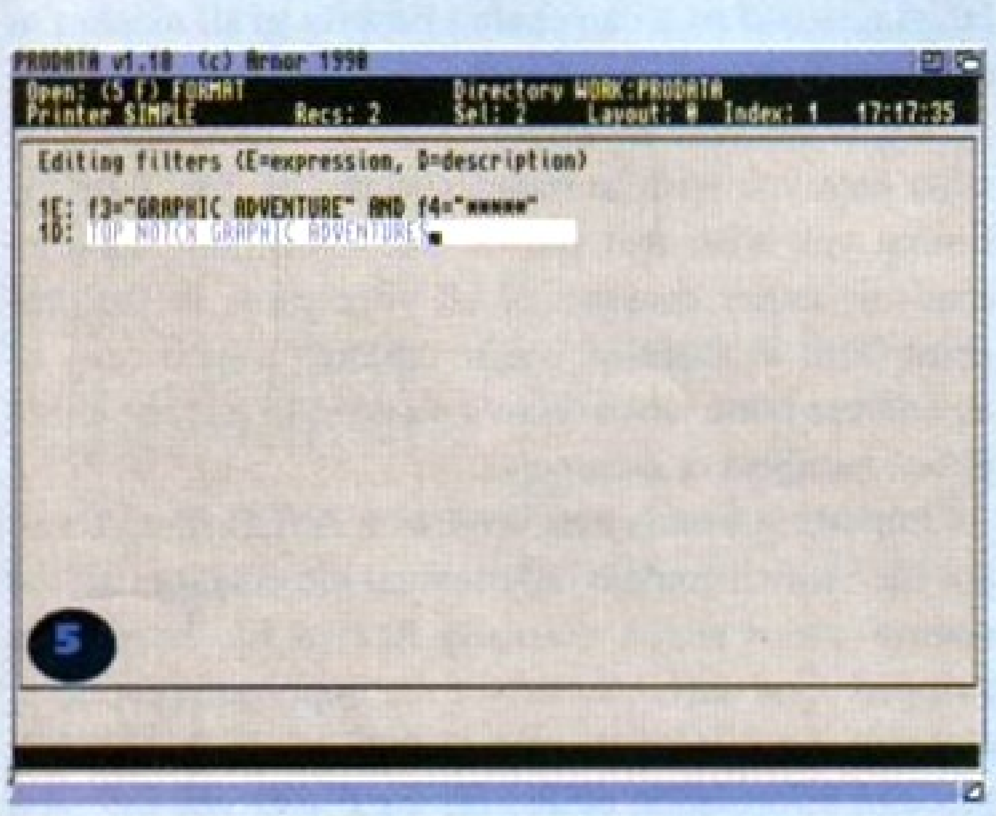
In order to create your own database you must first set-up the field names; that is the emblem that appears on the left hand side of a database card (name, address etc).



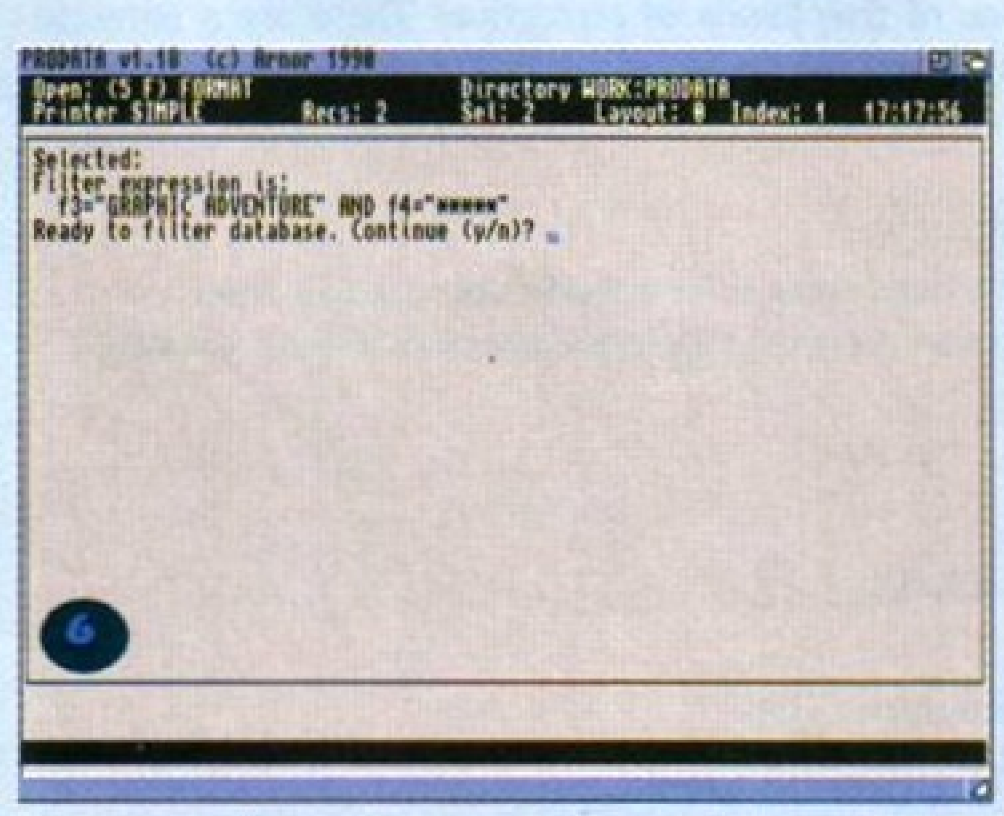
Then you can start entering your own card data on the fly. Here we're entering some game information about Monkey Island. You'll see that I've given it five stars.



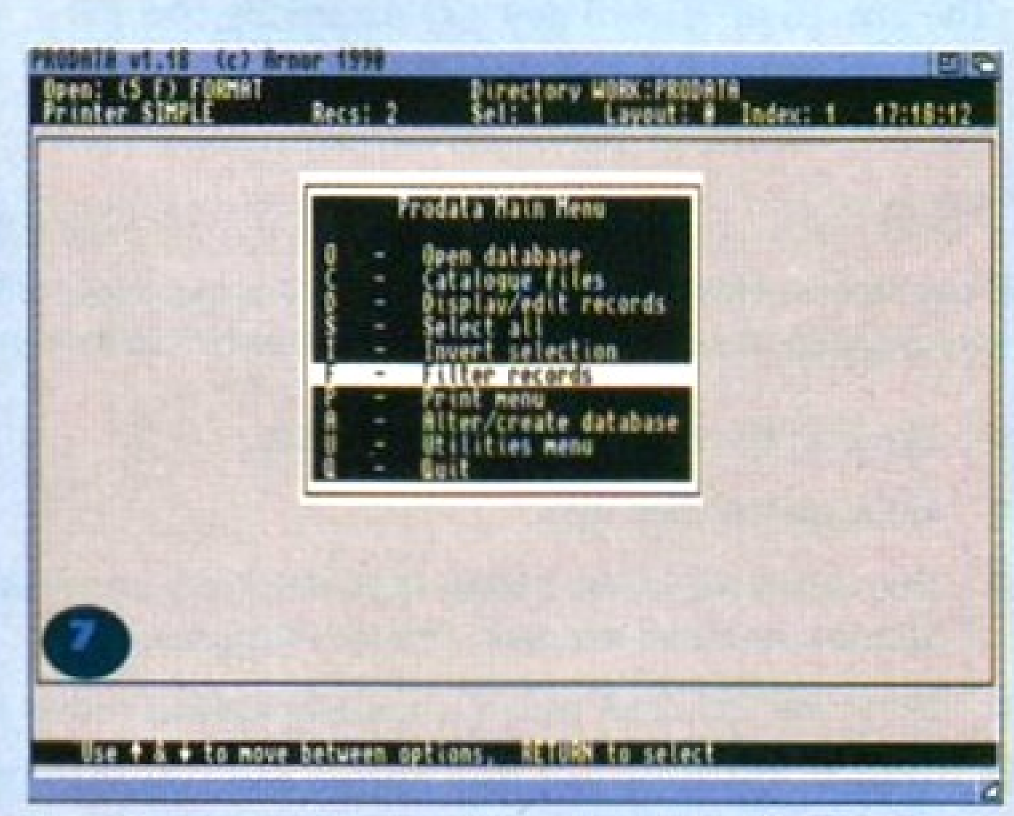
One can also change the layout of the card from this entry screen. You do, however, have to create those layouts before hand.



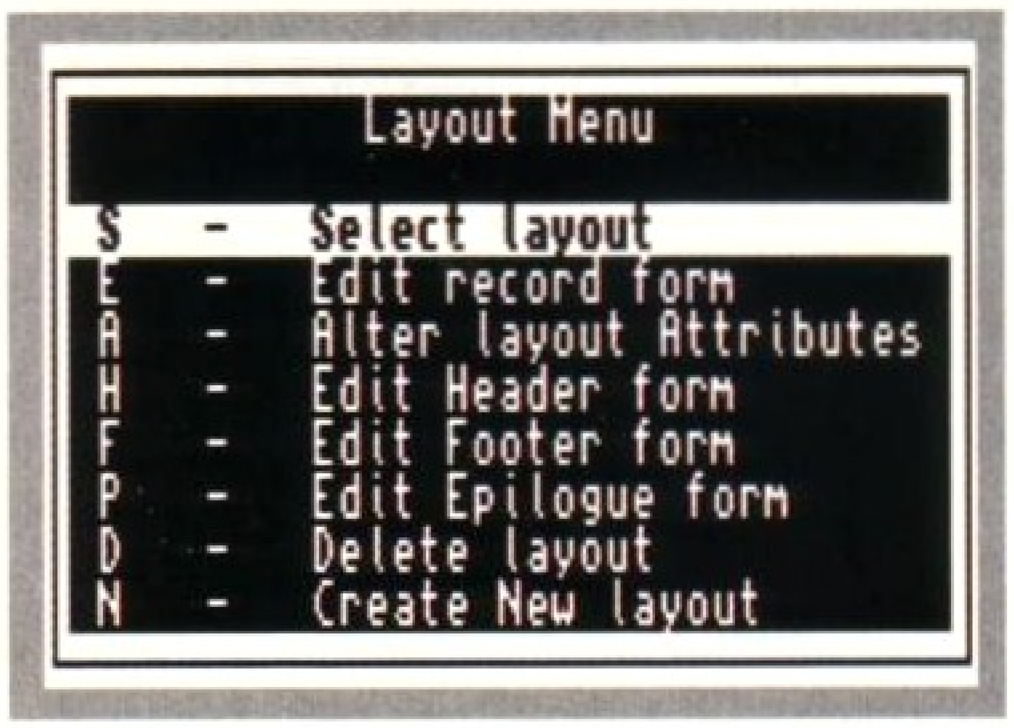
Here we're performing a search on the new data. We're asking the database to look up all adventure games which we awarded fives stars.



With the conditions all entered we can sift through all the files in the database. Those files that it finds are stored in their own section of memory.



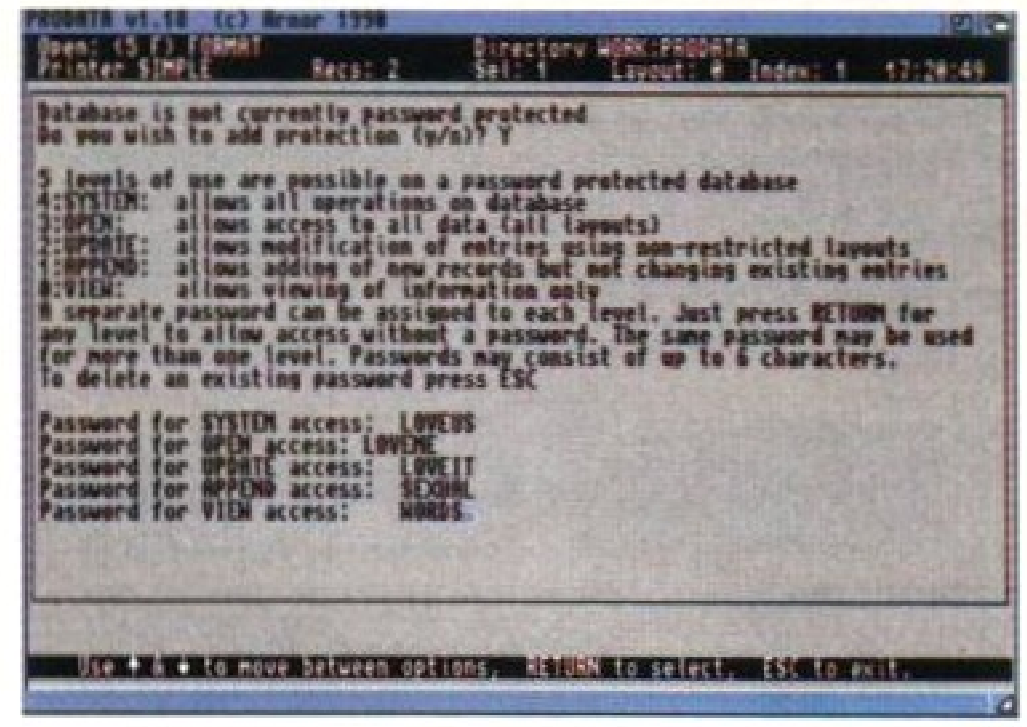
Then you can peruse those lovingly sorted files at your leisure. It sure saves sifting through hundreds of individual cards.



The layout of a database is the way it looks on screen as you view it, or on paper after you've printed it out. You can place fields anywhere you want.



The main menu enables you to perform simple housekeeping tasks on the database, or more strenuous filtering jobs.



Should you wish to stop prying eyes seeing portions of your data you can set up a series of passwords giving different levels of access.

Prodata achieves this kind of search with a feature called filtering. It does this with something called an 'expression evaluator' which enables you to enter equations for searching data. These expressions are built up in much the same manner as equations and can include lots of different clauses, enabling you to get at very specific chunks of data.

Say for example you wanted to find out all the people in the database with the name Paradis. Your search criteria would be: 'Paradis' IN F1. All this is saying is: give me all those records with the word Paradis in the first field. When you set this on its way it would happily trundle through all the records checking the contents of the first field (normally the name field) and then making a note of any containing the word Paradis.

It's also possible to search your data in terms of numerical values. Let's say that your fourth field contains details of people's salaries. You could type in the filter: F5>11999 and *Prodata* would check then contents of the fifth field for all those cards with a value higher than 11999.

Just like equations, the filter expressions can be chained together to narrow down the choice. Let's say we wanted to find out all those people called Paradis who earn £12,000 a year. You'd simply type in F1='Paradis' and F5>11999. This method of narrowing down information is extremely useful because you can start off with a fairly wide search and slowly narrow all the cards down until you encounter the specific one you need.

To actually create a filter with *Prodata* you should access the Alter/create database option and then pick the Create filter option by pressing F. Each filter is made up of two lines: the actual expression and a description of that expression. To create a new filter hit the F1 key. The box on the right of the screen is a list of all the fields in your database; simply pick the field you'd like to perform the search upon.

The line 1E or 2E will now say something like F3. If you want to make a very specific search then enter an equals sign. Now if you want to search for text enter some quotation marks and the text you're looking for. If you're searching for a numeric value then simply enter that number. You'll now have a line which reads something like: 2E: f3='Amiga'. All you have to do now is enter your own description of that filter which will appear when using it.

You can continue down the list entering as many filters as you want. These will all be saved with the actual database file so you don't have to keep re-entering them every time that you want to make a search. If you're unhappy with your filter then just hit CTRL F3 and the line will be deleted. The list of operators you can use within the expression evaluator are listed on Page 14.

You have the right to be kept in the dark

These days everyone's getting increasingly suspicious of the amount of data stored on databases. At any one time in this country there are about 50 computers with information about you, your family, your financial standing, your car and even your dog. Scary right? All that data is stored on programs exactly like *Prodata* and just like *Prodata* there are ways of stopping people tampering with the program.

Prodata has a nifty function built into it called protection levels. This enables you to enter up to five different levels of password protection to data and so it's possible to keep information confidential even if other people have access to your Amiga.

The passwords you create can be assigned to different layouts of card. This feature means that it's possible to create several different kinds of layout for every database, each with different kinds of information included on them. For instance, one might simply show names and addresses, while another might also show a person's credit rating.

For each password which you assign you can set one of five levels of protection. These are a numeric code and are:

0: View – enables you to view data only.
1: Append – enables you to add data, but not to edit existing data.
2: Update – enables you to edit as long as the layout is non-restricted.
3: Open – enables you to access all data
4: System – enables you to access all areas and operations.

Mine's a print please

Of course it's all very well having oodles of lovely information stored on your Amiga, but what if you want to make the information available to a wider circle, then you'll need to make a hard copy with a printer. Fortunately, *Prodata* has an extremely flexible print-out system which enables you to produce well-designed card information quickly and easily.

Prodata uses printer drivers in exactly the same way as a word processor does. These are add-on programs which contain information specific to a particular type of printer. These are needed because printers are set up in different ways according to their type; laser printers need different information to that of dot-matrix printers.

To print out a database all you then have to do is select the appropriate driver (it'll be called something akin to the name of your printer) and then press the P key to send this to your printer. You can also print to screen or file. The latter option is useful because it creates one amorphous lump of data which you can then load into other programs such as word processing for further editing.

Balance of payments

Computer programs are normally very insular entities, and they rarely ever talk to other programs and when they do it's in a different language. Thankfully, though, *Prodata* is conversant in quite a few different languages and so it can chatter happily to all manner of different programs.

Exporting data is simply a case of choosing exactly what data you wish to transfer to the file and then the format you wish that file to take. You don't have to send the entire contents of all your cards to the program. This is useful if you're creating a hard copy of an address book when there's no need to include either phone numbers or comments.

Importing data is best used with ASCII files. These are files which contain only textual information; all the control codes which normally litter a file have been stripped. One useful feature of the importing process is that you can selectively import data, meaning that each piece of information pulled off the file can be assessed for relevancy and importing and exporting of data is carried out from the Utilities menu. Take control of your things and get organised!

Hard drive installation

If you're one of those increasing numbers of people with a hard drive in or outside your Amiga, then you're going to have to rename the Coverdisk before you can run the installation process. Here's the drill.

- Back up the Coverdisk (see Page 10).
- Click on the disk icon.
- Pull down the menu option RENAME from under the ICONS window and call the disk: Prodata-Program-Disc.
- Enter the CLI shell which is usually lurking within your system file.
- Type in 'CD DF0:' and then Return and then 'EXECUTE HDINSTALL dh0:'
- The configuration program will now run and you can set the program up the way you want it.
- Make yourself a large mug of coffee. You've earnt it.

All specifications subject to change without notice.

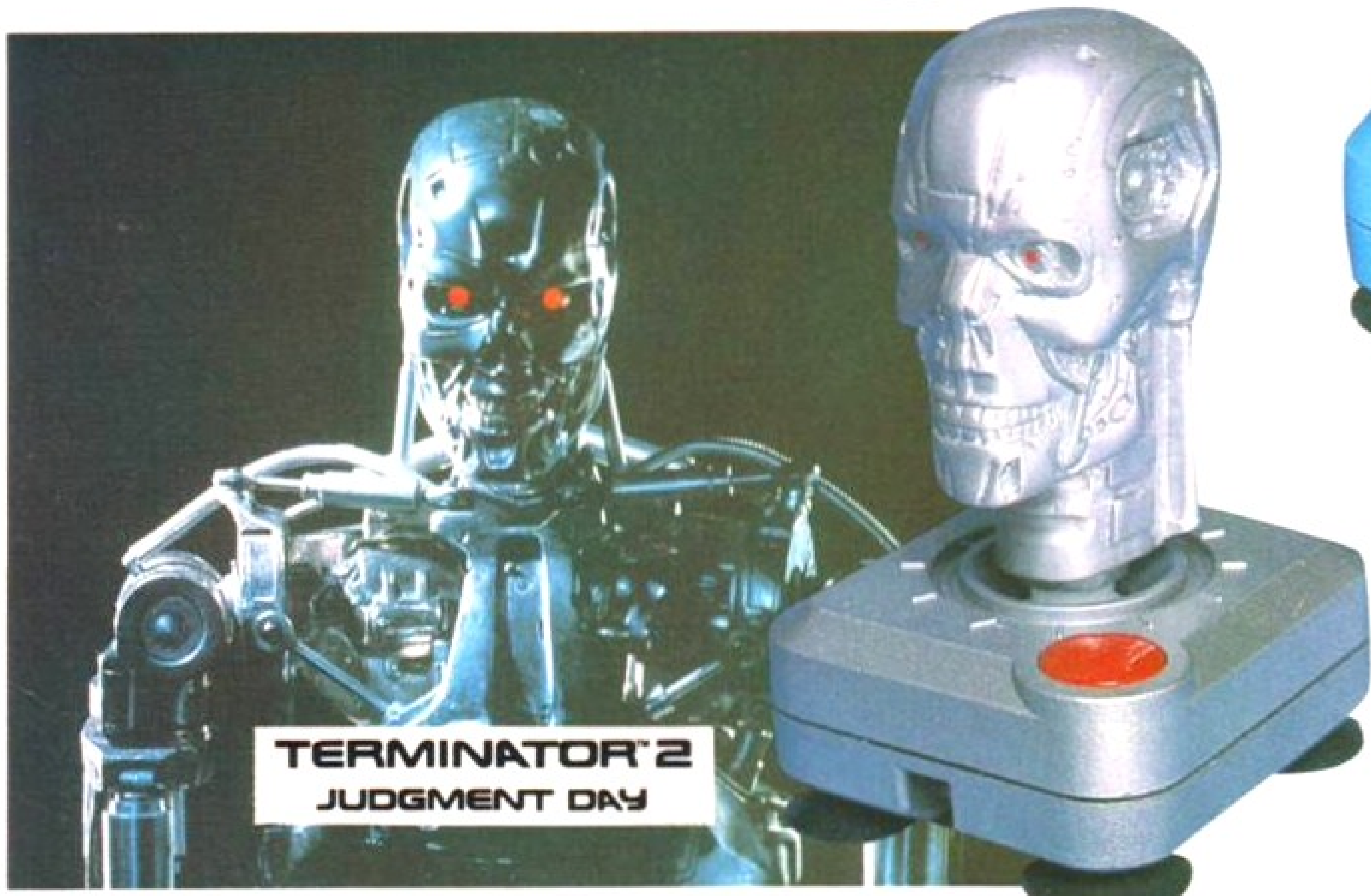
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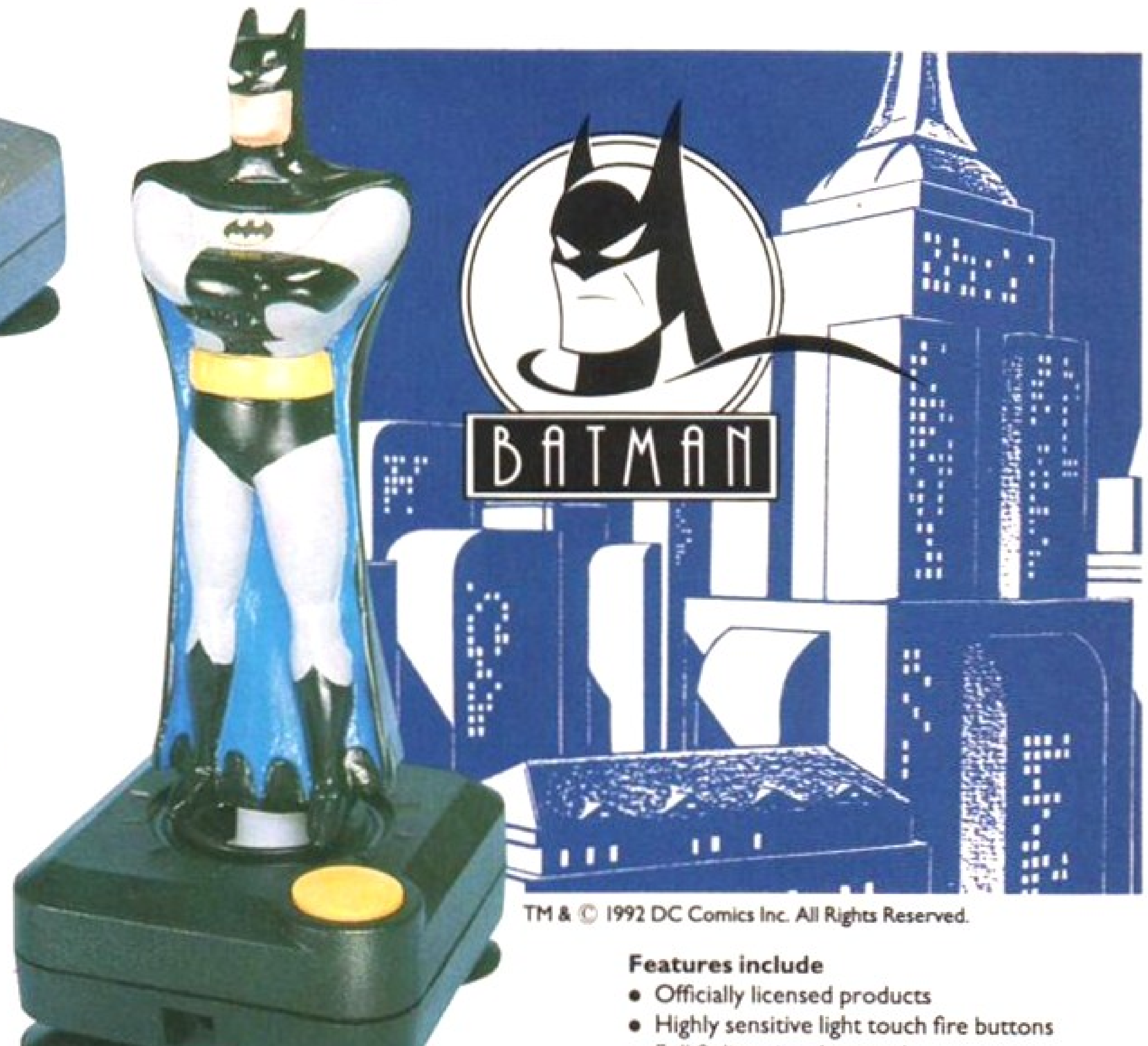
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GOOD NEWS: AMIGA FORMAT TO DROP IN PRICE

Bad news: we will be dropping the ***Amiga Format Collection*** series of complete Coverdisk programs. From next issue, ***Amiga Format*** will cost a mere £3.25 per copy but will feature only one Coverdisk.

We've decided to do this mainly because the response from readers over the Collection programs has been dwindling somewhat. If you read the magazine regularly you will already have built up quite a collection of free programs and, frankly, we're beginning to run out of options for other programs.

Sadly with the cost of printing nowadays we can't afford to revert to our original £2.95 price tag, which we'd held from Issue One way back in August 1989 – if we'd kept up with inflation it would be closer to £3.50 now.

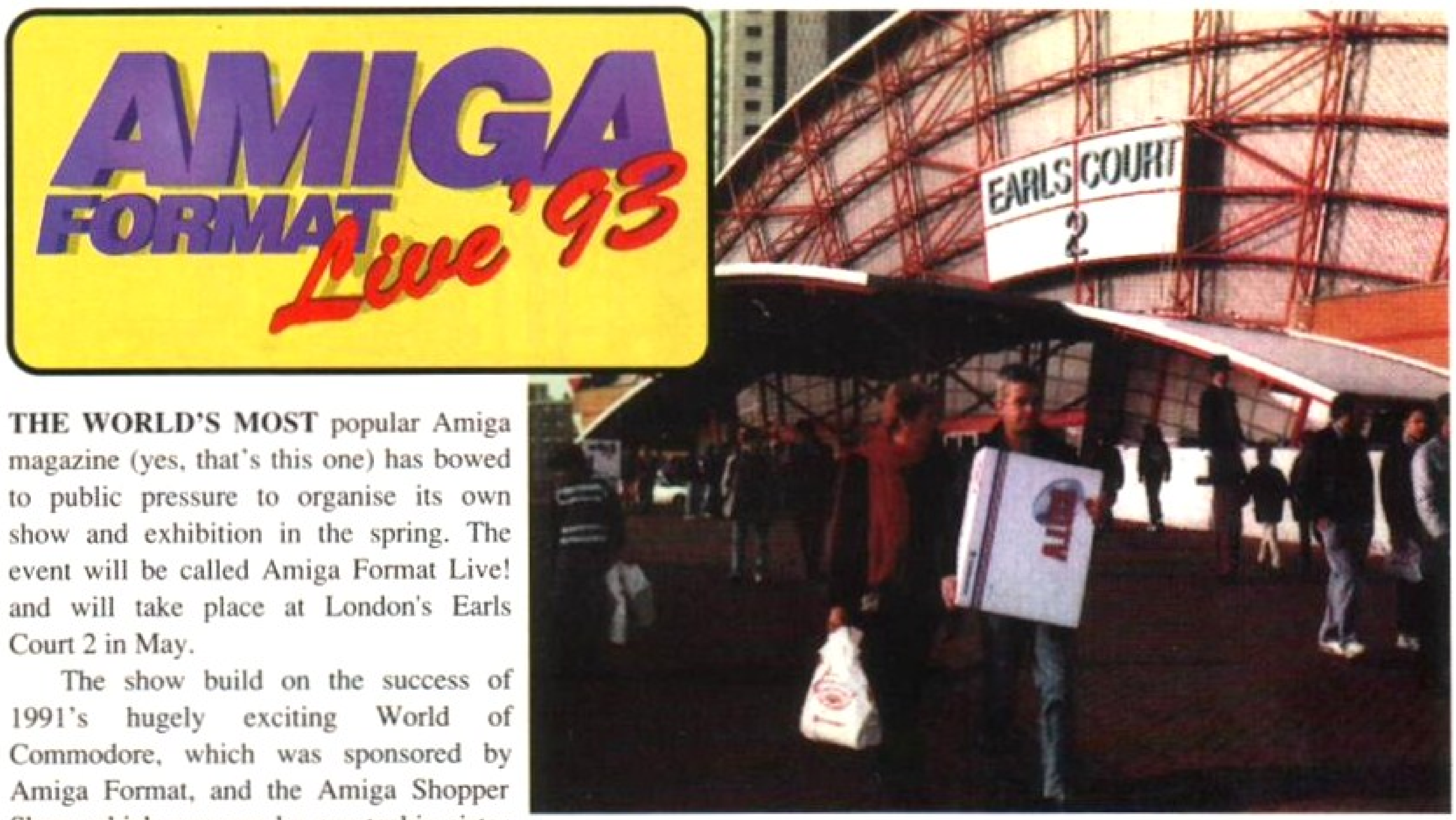
We can guarantee that ***Amiga Format*** will be as good value as ever, with a packed magazine and an exciting Coverdisk, and it's worth pointing out that we will do the odd one-off issue with a complete program on when we think it's appropriate. More treats and goodies!

FUTURETECH CONSUMER ELECTRONICS LIMITED

In the issue of ***Amiga Format*** for January 1993, in an article headed 'Firm's collapse leads to reader appeal, it was implied that Futuretech Consumer Electronics Limited of Newport Pagnell ("Futuretech") had ceased to trade.

Amiga Format is now satisfied that the above statement is wholly unfounded and desires to express its regret to Futuretech Consumer Electronics Limited and to apologise to them for any embarassment and inconvenience caused.

Amiga Format is Going Live!



The World of Commodore Show – our previous successful Amiga event.

THE WORLD'S MOST popular Amiga magazine (yes, that's this one) has bowed to public pressure to organise its own show and exhibition in the spring. The event will be called Amiga Format Live! and will take place at London's Earls Court 2 in May.

The show build on the success of 1991's hugely exciting World of Commodore, which was sponsored by Amiga Format, and the Amiga Shopper Show which was run by our techie sister magazine. All manner of events are planned, many of which will be unlike anything ever seen at a computer show before.

The core of Amiga Format Live! will be stands run by many of the leading Amiga software and hardware companies, with all their kit there in action for you to see and buy. There will also be an immense games arcade, in which you can experience (and even play) all the big Easter releases from the world's major games producers.

For further details you will have to wait until next month, but rest assured that we are planning carefully to make it the most exciting event of its kind ever – and it's only for Amiga owners! In the mean time, you can get your chance to make sure that whatever you want to see features at the show by turning now to Page 25 and filling in the form: you may even win a prize!

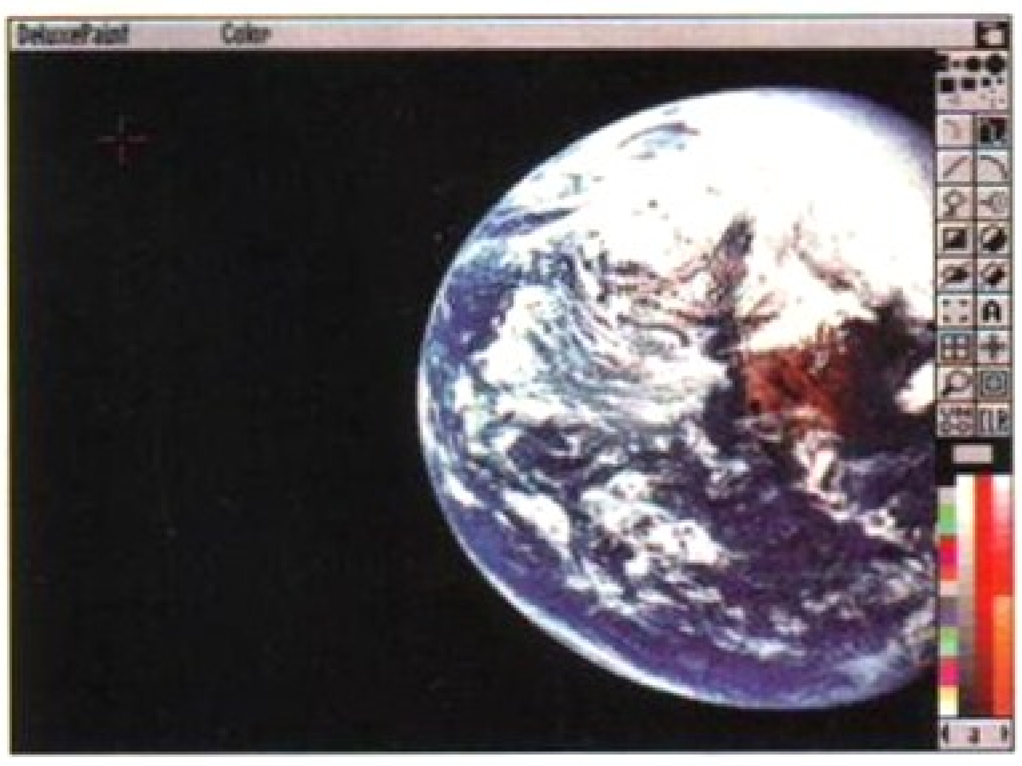
DPaint leads A1200 arrivals

ELECTRONIC ARTS ADAPTED vesion of Deluxe Paint IV, which is identified by the tag 'AGA' on the end of the name, will go on sale in mid-January and is expected to be the first example of A1200-specific software to go on sale.

The AGA version works in both 256-colour mode and in the new 8-bit HAM mode, which means you can paint in 262,000 colours. A test model we've seen looked a little slow in the maximum-colour mode but the effects of gradations of colour are just stunning: a slight disappointment is that the palette remains the same, where a new way of selecting colours might have been more appropriate.

Gremlin's A1200 Zool may just pip it to the post: the enhanced version is expected to go on sale any day now. It looks quite extraordinary, the programmers having used the extra bitpalnes to put masses of huge, colourful objects into the background instead of the simple copper colour-shading.

Programs already on sale that support the new colour modes include ASDG's Art Department Professional image processing program and their Morph image-distorting program, reviewed last issue.


The new, enhanced version of the Amiga's top paint program will enable you to use 262,000 colours on the screen.


The new, enhanced version of the Amiga's top paint program will enable you to use 262,000 colours on the screen.

Perhaps more exciting is that next month will see the release of the first 256-colour DTP package – and it's one of the cheapest on the market.

It's Gold Disk's third version of Pagesetter, which they are putting out at the experimental cut-down price of only £49 via Silica (081 309 1111). Considering that you get not just a DTP layout program but also a paint package and a word processor for your money, it seems like quite a deal.

Amiga world goes red-nose crazy!



There's only a month before it's Comic Relief time again, and the better-off start digging into their pockets to help the world's less-fortunates. This year, even gamesplayers are expected to take part.

In a totally-applaudable move, Ocean Software have combined their games-making skills with the Comic Relief cause, and are about to release a stonking new game called Sleepwalker as part of the fund-raising exercise. The game will also feature in a special Comic Relief A1200 Red Nose pack which Commodore have put together.

Sleepwalker is a massive platform game where you play the part of a dog who is trying to protect his sleepwalking owner. You rush around trying to prevent your master from walking off the edges of buildings, getting run over by cars and heaps of other deadly accidents. Throughout the game you're treated to some glorious graphics, plus sound effects created by none other than Lenny Henry himself.

As well as donating a large portion of the profits from the sale of Sleepwalker to Comic Relief (around £5 per copy sold), Ocean have organised a national challenge in which you can get involved. Each copy of Sleepwalker contains a sponsorship form which gamesplayers can use to become part of Red Nose Day.



The first ever official Comic Relief game, in which you play a dog who must save his sleep-walking master.

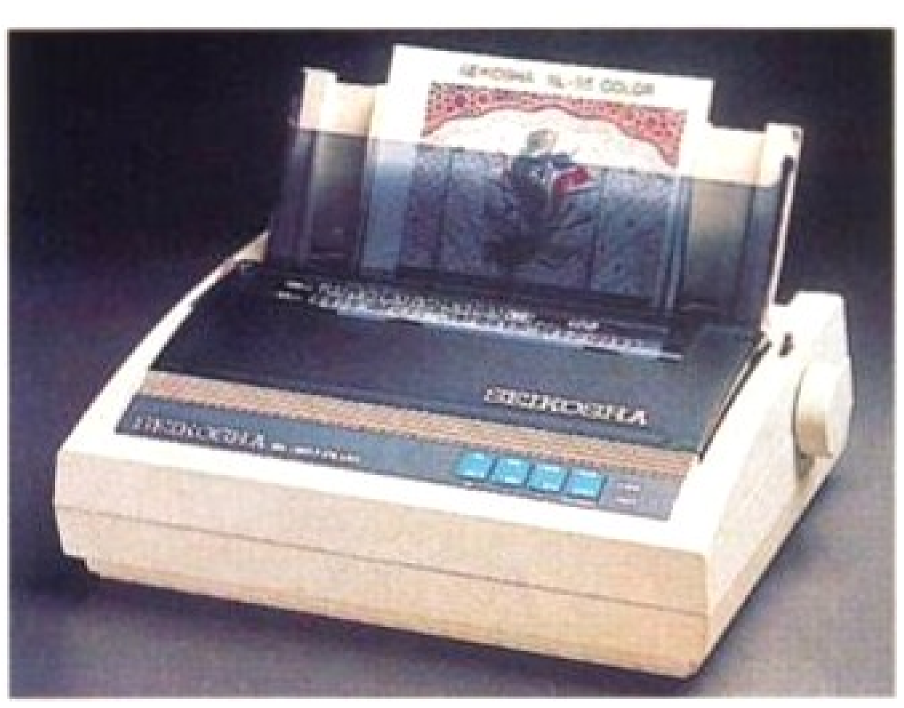


Guiding a zombie-like human being through terrors and traps isn't alwats an easy task – but it's in a good cause!

All you need to do is get yourself sponsored and play the game – your sponsors pledge cash for your high scores, and hopefully heaps of extra dosh will be winging its way to the needy as a result of a few hours playing games.

A grand final in Central London has been organised for Red Nose Day itself (March 12th), and challenges are being held in retail shops around the country prior to this. Now that's what we call fun-raising! Look out for copies of Sleepwalker on the shelves in late January – and then get some practice in before the big day.

Seikosha pop up with bargain colour 24-pin



Seikosha's new 24-pin colour printer is claimed to be the cheapest ever to go on sale, which could rapidly make it a very popular item.

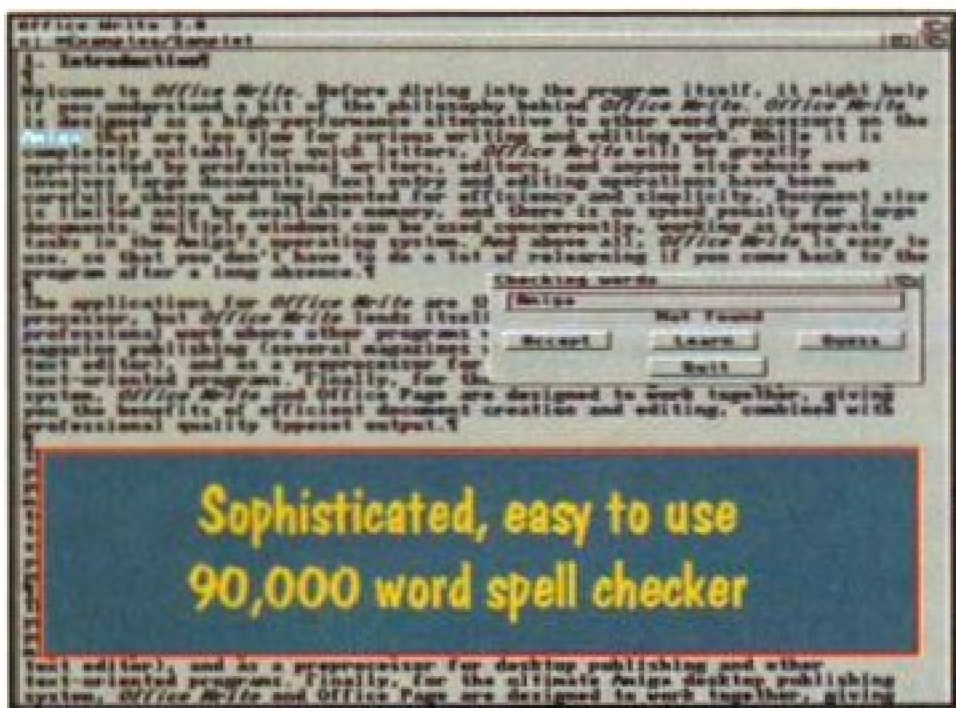
PRINTER MANUFACTURERS SEIKOSHA have just announced a brand new 24-pin colour printer for the ridiculously low price of £249. This is claimed to be the lowest price at which a colour 24-pin dot matrix machine has ever gone on sale: the actual on-sale price will no doubt be substantially less than this RRP.

The new machine is the SL-95, and it's capable of speeds up to 240 characters per second in super draft mode, or 64 cps in Letter Quality mode. It offers Epson compatibility and a standard parallel interface, making ideal for the Amiga. It's also the only printer in its class to offer a 43K buffer and nine totally separate fonts built-in. The new SL-95 hits the shops in January and it comes with a full 12 month warranty. For more information contact Seikosha on 0753 685873.

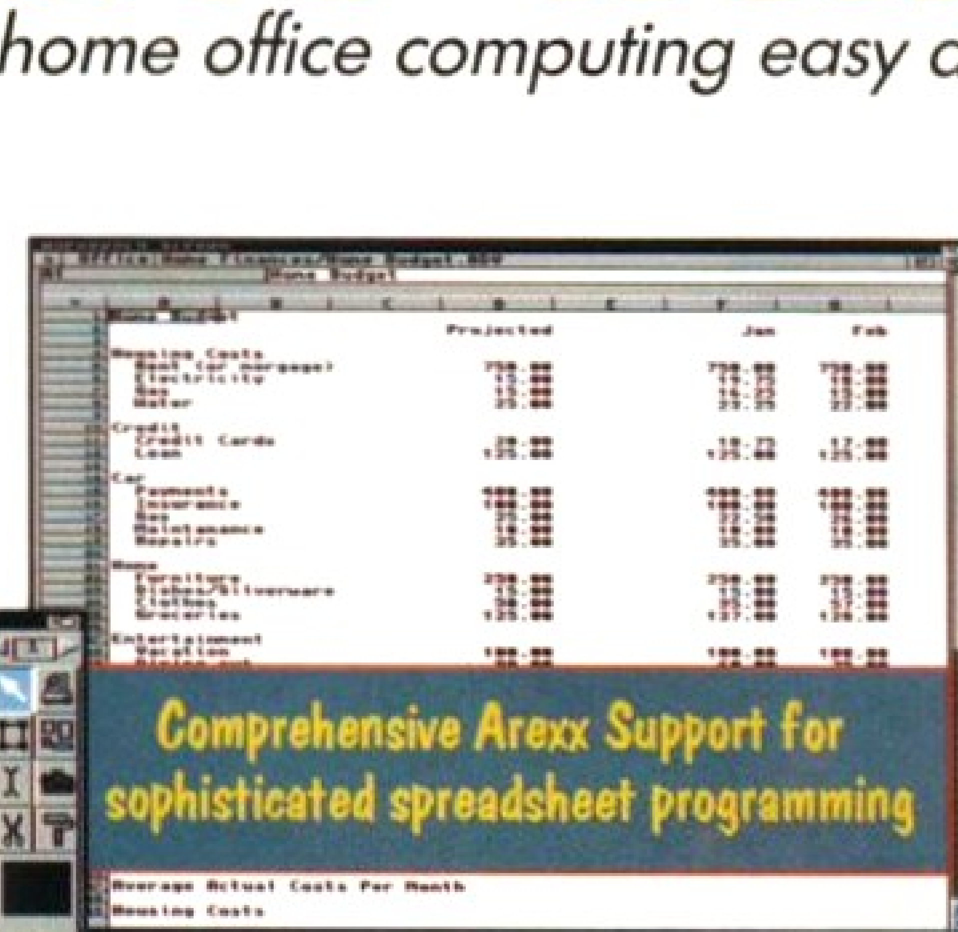
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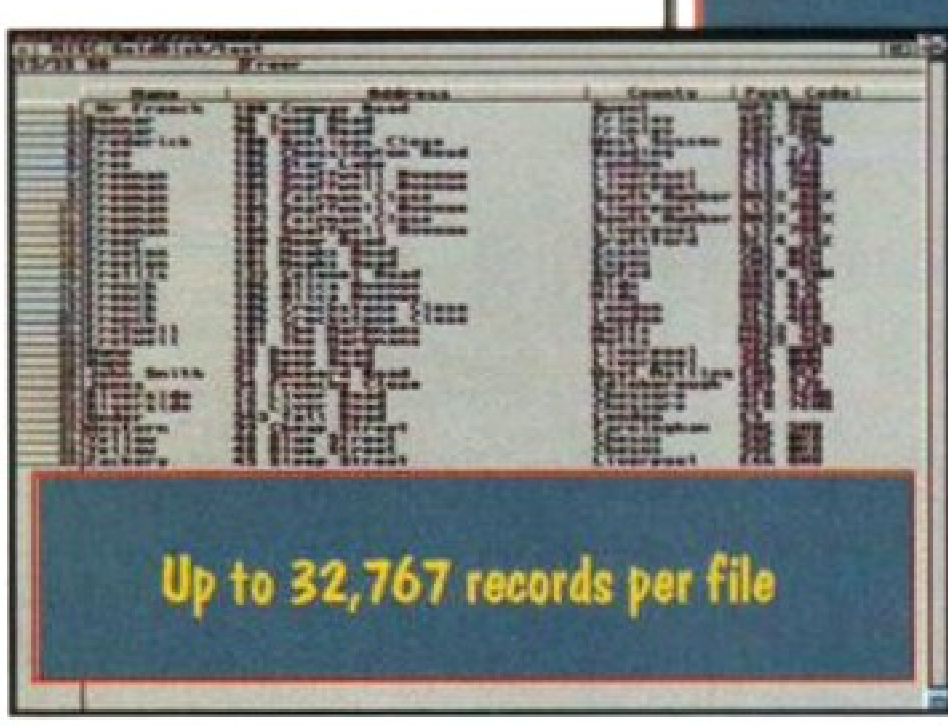
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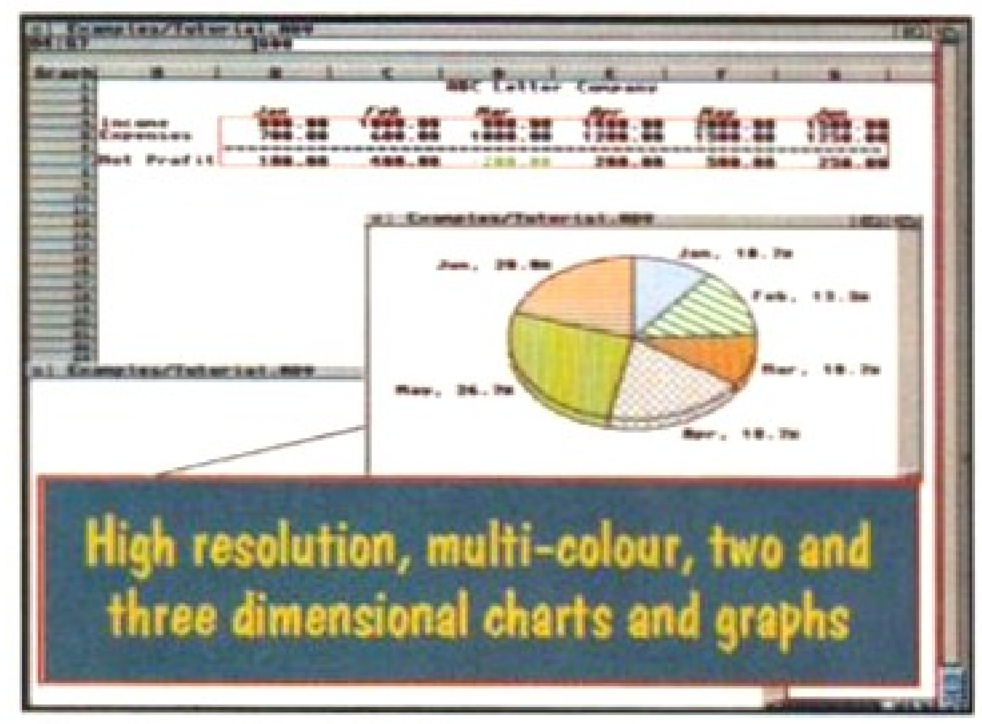
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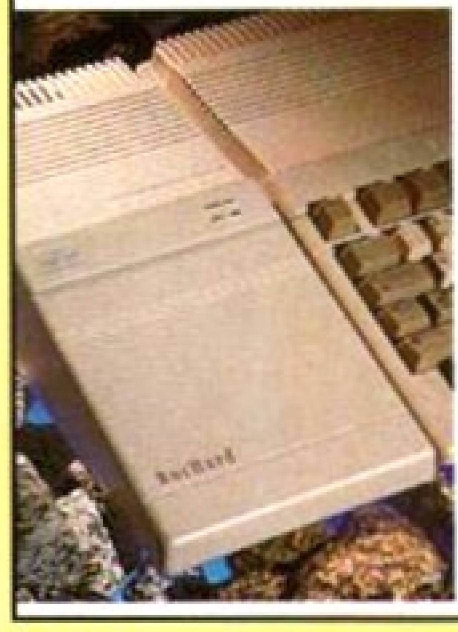
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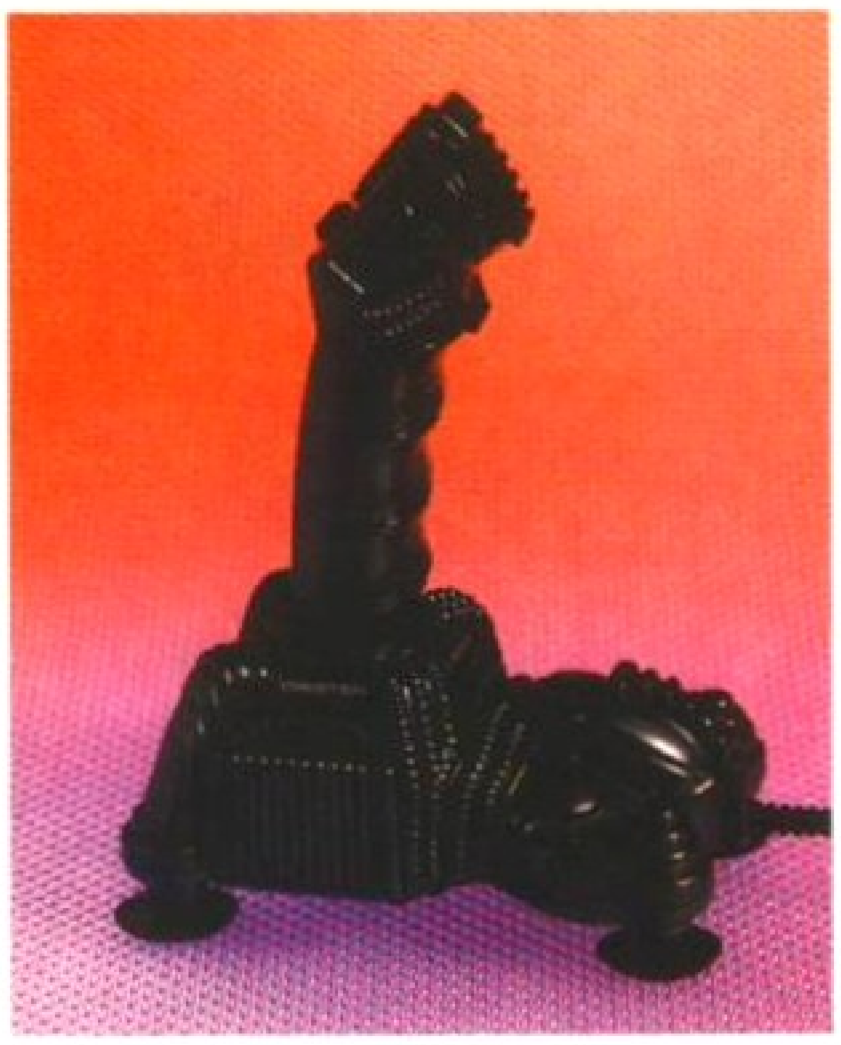
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Cheetah's mythical stick



Renowned for their range of peculiar and oddly-shaped joysticks, Cheetah announce a new device for their FuturiStick range. The ArgoStick looks as if it's a spare part left over from the latest Aliens film, but, according to Cheetah, it's been carefully sculpted to provide the ultimate in comfort and control for the most serious of games players. The main trigger button is carved into the shape of a skull and there are several other fire buttons on the stick. There's also an autofire mode to save you from actually having to do anything in shoot-em-ups. The ArgoStick is availble in two versions, a high-tactile version for £12.99 and a fully micro-switched version for £14.99. Contact Cheetah on 0222 867777 for more details.

Art for clip's sake

Artworks, the DTP clip art specialists, have just released three new disks of art for the Amiga. Each disk has a specific theme and contains between 115 and 270 high quality black and white IFF bitmaps drawn especially for the Amiga by professional artists. The three topics are Prehistoric Life, Weddings and Family Occasions, and Signs and Symbols 2. Each disk costs £6.99, or all three can be obtained for just £18.00 from Artworks (0469 588138)

CDTV drives harder

ZCL/Calculus announce the release of their new CDTV External DataPac, a rather neat black 65 Mb hard drive suitable for upgrading any Amiga CDTV. The package comes complete with plug-in SCSI controller card, Workbench 1.3 and installation disks and manuals, and all necessary cables and connectors. The kit costs £349.99. Alternatively, you could supply your own hard drive unit and buy just the CDTV SCSI adapter separately for the reduced price of £99.99. Contact ZCL/Calculus on 0543 251275 for more details.

Unleashed: first A1200-booster

Power-hungry A1200 owners will be glad to know that the first bona fide A1200 expansion is here already. The Microbotics MBX1200 is a 32-bit memory upgrade which fits in the trapdoor slot on the underside of the new Amiga. The MBX1200 comes in several configurations: with 1, 2, 4, and 8 Mbyte SIMMs installed, and a 68881 floating-point maths co-processor.

The MBX1200 board also features a socket suitable for a 25 MHz or 50 MHz oscillator which enables the newer 68882 floating-point unit to be installed instead of the 14MHz 68881 variety. Each MBX1200 board is supplied with a disk containing a few maths-coprocessor benchmark tests and graphing programs.

The performance of the 68881-based MBX1200 makes impressive reading: on average, it's 7 times faster than a normal A1200 and 22 times faster than an A500. With the 50Mhz 68882 version, this average performance figure rises to 19 times faster than an A1200, and 55 times faster than an A500.



The A1200: soon to be given an extra boost in power by the addition of a card with extra RAM and an FPU.

Currently, the Microbotics board is available from two UK dealers: ZCL/Calculus (0543 251275) for: £349.99 (4Mb/14Mhz) and £449.99 (8Mb/14MHz).

Or from First Choice Computers (0532 637 988) for: £133.00 (unpopulated/14Mhz 68881), £195.99 (1Mb/14Mhz), £252.99 (2Mb/14Mhz), £337.99, (4Mb/14Mhz), £POA (8Mb/14Mhz), £199.00 (unpopulated/25Mhz 68882).

'Amiga still the tops' according to people who sell them

Despite the high media profiles of the Sega and Nintendo games consoles, it seemsx that the Amiga is still in there and fighting when it comes to sales.

A major survey of computer retailers conducted by trade magazine *Computer Trade Weekly* (*CTW*) reveals some interesting facts and figures, including the fact that the Amiga is the format on which the far-and-away best-selling computer game of the year – Gremlin's *Zool* – was exclusively released.



Gremlin's *Zool* – the best-selling comoputer game of 1992.

CTW asked a variety of questions on matters of both opinion and fact, and many of the answers are revealing. While Kelly Sumner and Commodore were top choice for 'Hero of the year' with 18% of the vote (CTW and Sonic were in second and third), Commodore also came as runners-up in the 'Villain of the year' category with a 12% vote, beaten convincingly by the seemingly-unpopular Nintendo distributor Bandai with thumbs-down from 46% of comouter retailers!

'Hype of the year' awards went to *Sonic 2* and *Streetfighter 2* (perhaps not surprisingly) in that order, while the launch of the A1200 was in third place in the 'Event of the year' awards, narrowly behind two industry-only events and one place ahead of the Future Entertainmant Show, the only truly public event to get a place on the list.

The 'Best TV ad' awards went to two Sega ads and the Nintendo ad, with Commodore's Amiga Christmas ad following up in fourth – still some way ahead of all the rest and, considering that the Amiga ad has to get over the serious side of the machine, not a bad showing at all.

In one category, dealers were asked to vote on what they thought was the best-quality game of the year. While the Sega's *Sonic 2* came first, the other four titles in the Top Five were all Amiga games – *Zool* in second, *Sensible Soccer* in third, and *Monkey Island 2* tying for third place with *Formula One Grand Prix*.

A similar line-up was in the computer game of the year by sales category (where console games were excluded). *Zool* was top seller, with Sensible Soccer, *Monkey Island*, lemmings and *F1 Grand Prix* following up. All in all, rather a good line-up and one which shows that the Amiga is still going from strength to strength.

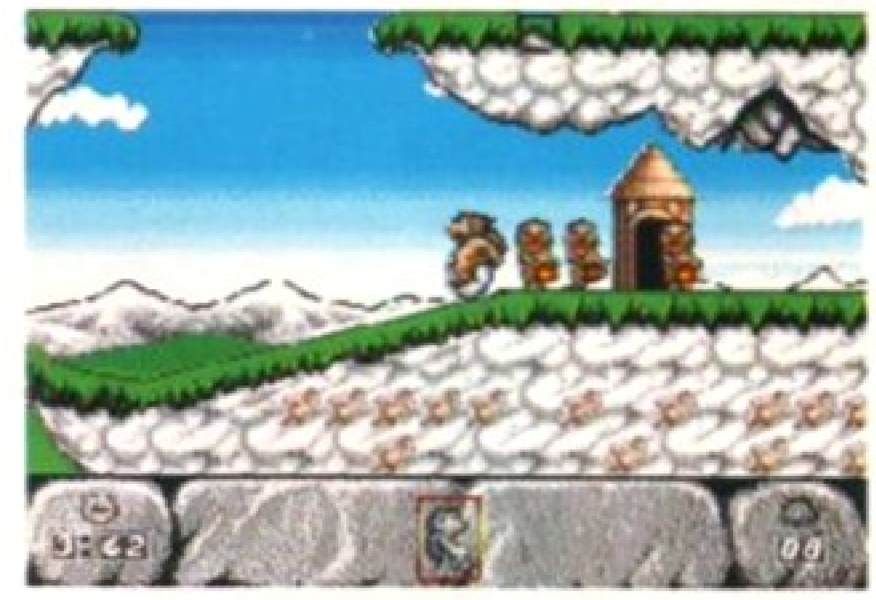
This month's top 30

ELSPA PENGUIN CHARTS COMPILED BY GALLUP

Pos		Title / Publisher	Rating
1(1)	■	**Zool** Gremlin Graphics	FG95%
2(6)	▲	**Sensible Soccer 92/93** Renegade/Mindscape	80%
3(-)	New	**Archer Maclean's Pool** Virgin	89%
4(-)	New	**Road Rash** Electronic Arts	84%
5(5)	■	**Pinball Fantasies** 21st Century	FG90%
6(2)	▼	**Putty** System 3	FG95%
7(-)	New	**WWF European Rampage Tour** Ocean	18%
8(10)	▲	**Humans** Mirage	72%
9(-)	New	**Premier Manager** Gremlin Graphics	87%
10(-)	New	**Nigel Mansell** Gremlin Graphics	55%
11(12)	▲	**Monkey Island 2** US Gold	FG95%
12(7)	▼	**Campaign** Empire	79%
13(4)	▼	**Lotus 3: The Ultimate Challenge** Gremlin Graphics	76%
14(-)	New	**AV8B Harrier Assault** Domark	60%
15(8)	▼	**Jimmy White's Whirlwind Snooker** Virgin	FG91%
16(-)	New	**Shuttle – Space Flight Simulator** Virgin	70%
17(13)	▼	**Civilization** Microprose	FG94%
18(14)	▼	**Fire and Ice** Renegade/Mindscape	89%
19(16)	▼	**Formular One Grand Prix** Microprose	FG92%
20(3)	▼	**Assassin** Team 17	85%
21(-)	New	**Curse of Enchantia** Core Design	62%
22(21)	▼	**PGA Tour +** Electronic Arts	Comp
23(-)	New	**Dream Team** Ocean	Comp
24(17)	▼	**Legend of Kyrandia** Virgin	87%
25(-)	New	**Lemmings/Oh No! More Lemmings** Psygnosis	Comp
26(-)	New	**Indiana Jones – Fate of Atlantis** US Gold/Lucas Arts	FG92%
27(15)	▼	**Graham Taylor's Soccer Challenge** Krisalis	82%
28(24)	▼	**Fireforce** ICE	71%
29(-)	New	**Sabre Team** Krisalis	87%
30(29)	▼	**Eye of the Beholder 2** US Gold	FG91%

A race for more Humans

If you've already completed Mirage's recent puzzle'n'platformer Humans, don't despair. Mirage are due to release a new data disk called Humans – the Jurassic Levels this month. The disk is available separately for £19.99, or bundled with the original Humans game for £29.99.



Humans – lots of new levels of this really rather enjoyable puzzle game are on the way soon.

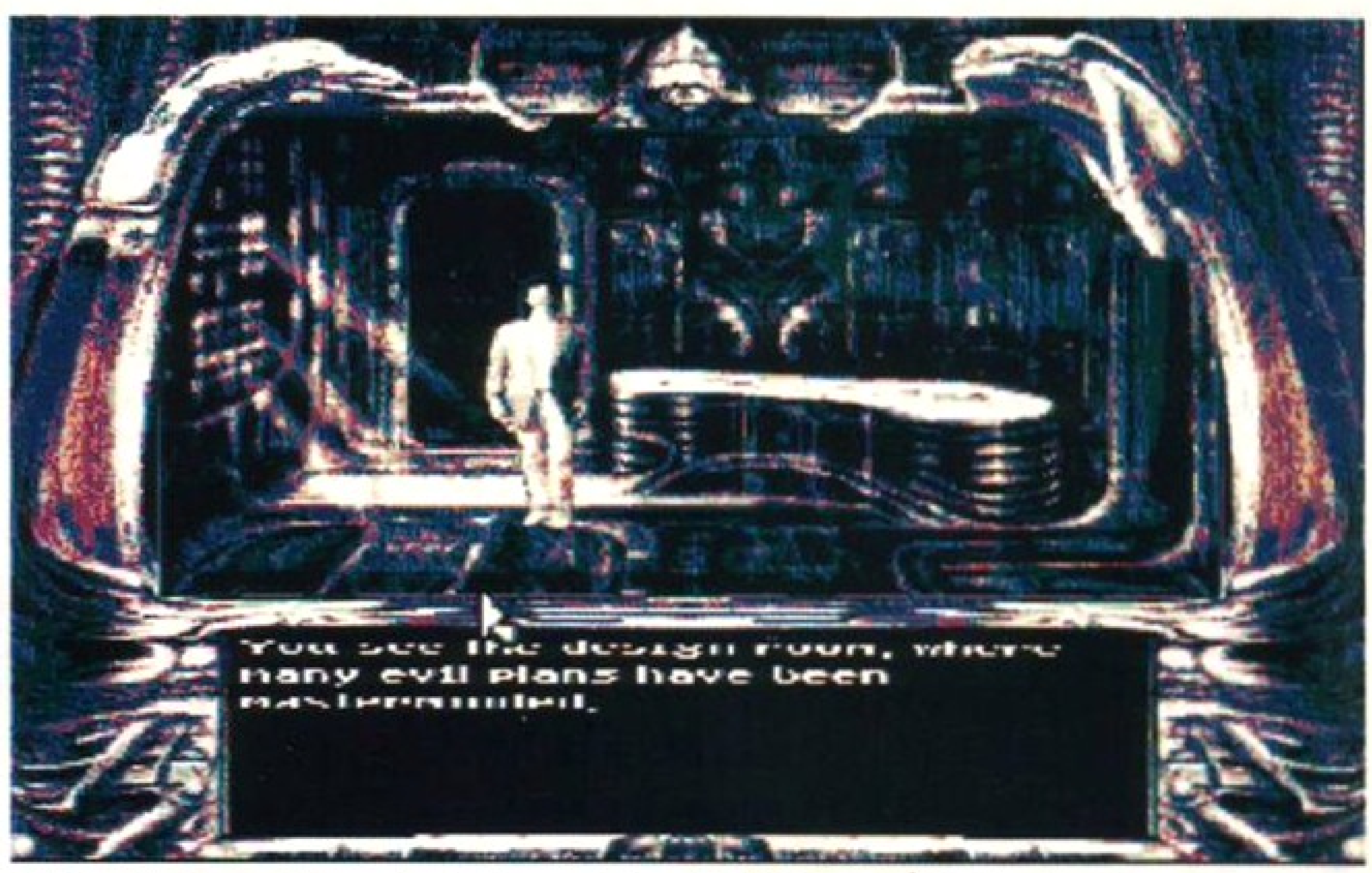
Virgin kicking off next

Shock news this month is that the long-awaited Kick Off 3 by Dino Dini is not going to be published by Anco, the software house responsible for the previous incarnations of this massively-acclaimed football hit. Dini has recently signed to Virgin, and will instead be creating his new football masterpiece for them. Due to copyright reasons the new game cannot be called Kick Off 3, and is likely to be known as Goal, but it will essentially be Kick Off 3 in all but name. Goal is due to be released in the spring of this year, and we'll bring you a full review as soon as it's ready. In the meantime, Neil Jackson (who's managed to grab a sneak preview on the sly) can assure anxious fans that the game is already looking better than Sensible Soccer and is immensely playable, even in its half-finished condition.



Kick Off – arguably the finest football game ever and soon out in its long-awaited third version.

Giger bites in Dark Seed



Dark Seed – the graphics are by the famous Alien artist HR Giger, digitised and looking great.

We've been waiting for it for months and suddenly it appears just a few days too late to make it into this month's review section. DarkSeed from CyberDreams is the game in question, and it's one hell of a peculiar affair. Featuring plenty of digitised artwork by the famous Aliens artist, H. R. Giger, DarkSeed is no ordinary adventure game. For a start, the Amiga version runs in interlace mode, which makes for highly-detailed (if a little flickery) graphics.

The game's plot is also a bit out of the ordinary. It follows a familiar horror-story plot, where the new owner of an old house finds out that everything's a little on the wierd side. DarkSeed follows the progress of this unlucky owner as he attempts to find out why all these strange and sickening Giger aliens keep appearing in his living room.

Graphically stunning, and certainly the oddest game we've seen this year, DarkSeed uses a digitised main character in a game style similar to that of Monkey Island, only more malevolent. It's probably the sort of game you'd only want to play through to the end once, and then forget, but it's still something worth adding to your collection, just for the amazing graphics. We'll bring you a full review in next month's Amiga Format, as soon as we've worked out what it's actually all about.

AMIGA FORMAT Live '93

HAVE YOUR SAY IN WHAT HAPPENS ON THE DAY!

Amiga Format Live '93 is happening in May at Earls Court 2. It's going to be the event of the year for all Amiga owners – a show organised by the best Amiga magazine in the world, exclusively for Amiga owners all over the country.

But there's one very important thing that will make it a success – and that's you. What we'd like to do is offer you, the readers of the magazine, the chance to have a say in what goes on at the Show. If you could take a few moments to fill in the questionnaire, you could win a free pair of tickets and we can make sure that everything you want to see at the Show will be there – as well as much, much more besides!

Tear this out NOW and send it in – the first ten drawn at random will win a free pair of tickets!

1. What will be your main reason for going?

- ☐ a) To see the latest games
- ☐ b) To see the latest hardware
- ☐ c) To see the latest serious software
- ☐ d) To buy games
- ☐ e) To buy hardware
- ☐ f) To buy serious software
- ☐ g) To buy an Amiga
- ☐ h) To get some advice or technical help
- ☐ i) Other (please state)________________

2. Which of these question and answer sessions and events would you most like to attend?

a) Meet the games programmers
b) Meet the Amiga Format team
c) How to… graphics
d) How to… DTP
e) How to… music
f) How to… video
g) Games-playing competitions
h) Presentations by serious software companies

3. Which five companies would you most like to visit at their stand at the Show?

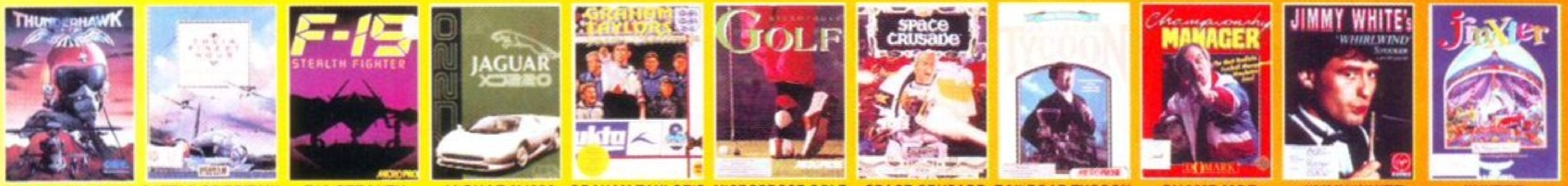
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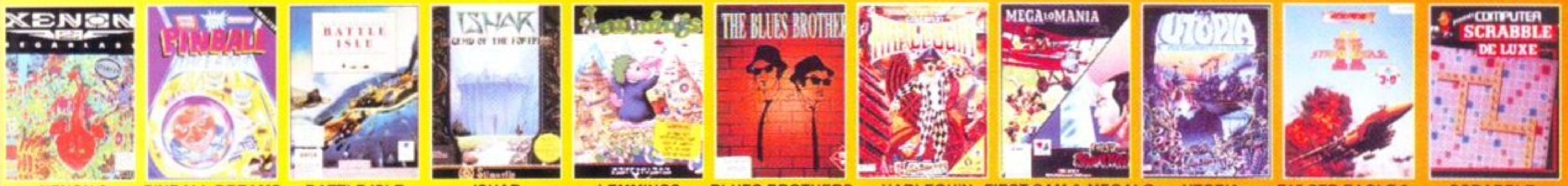
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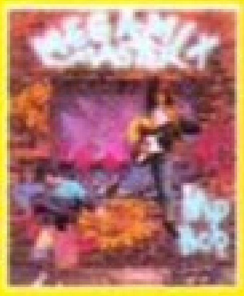


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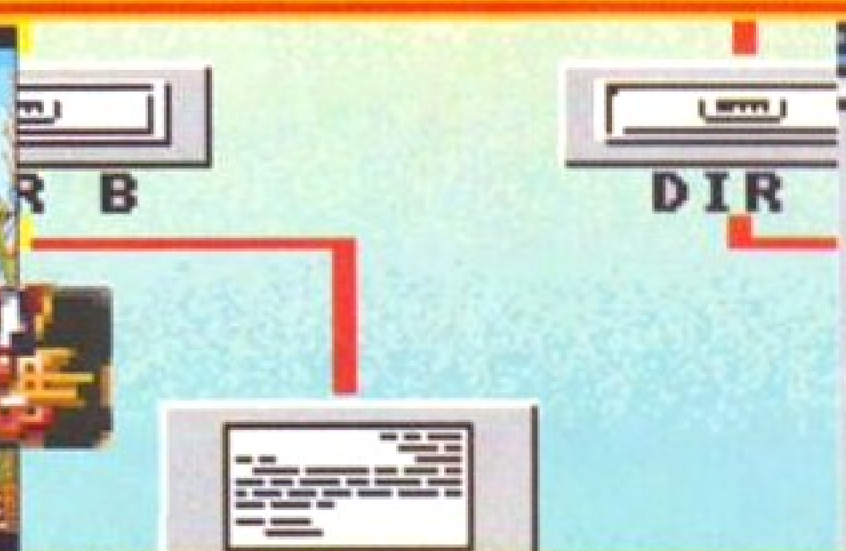




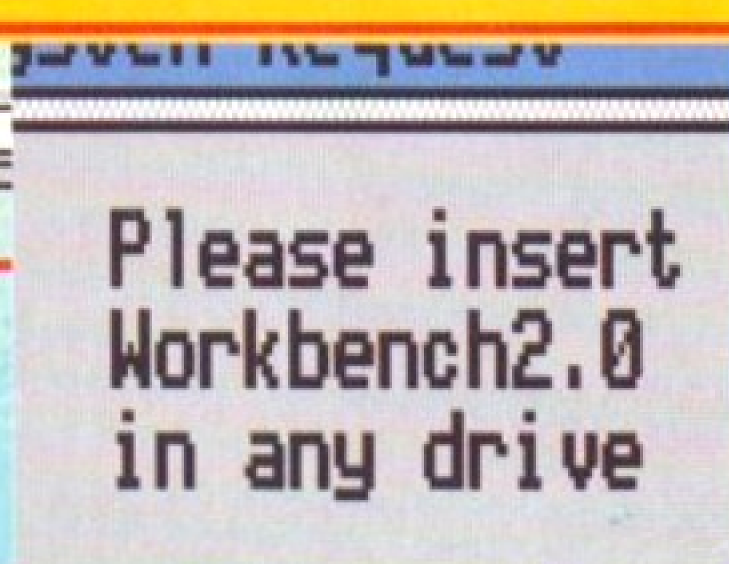
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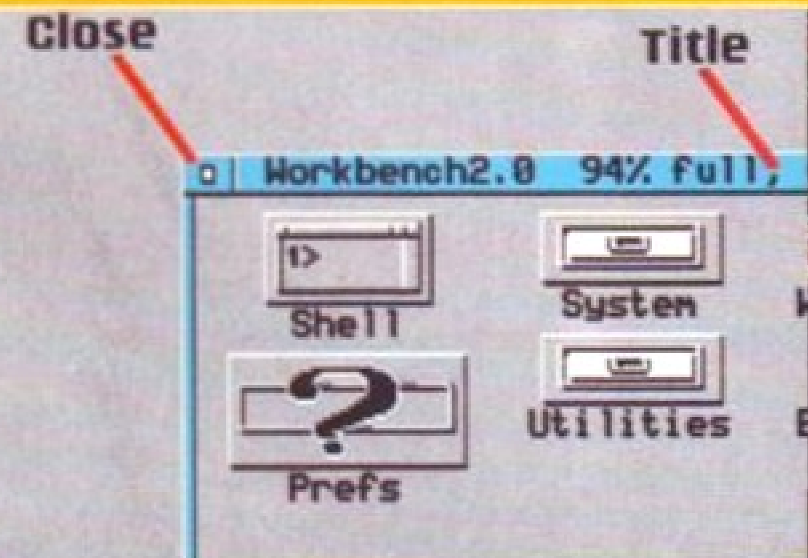
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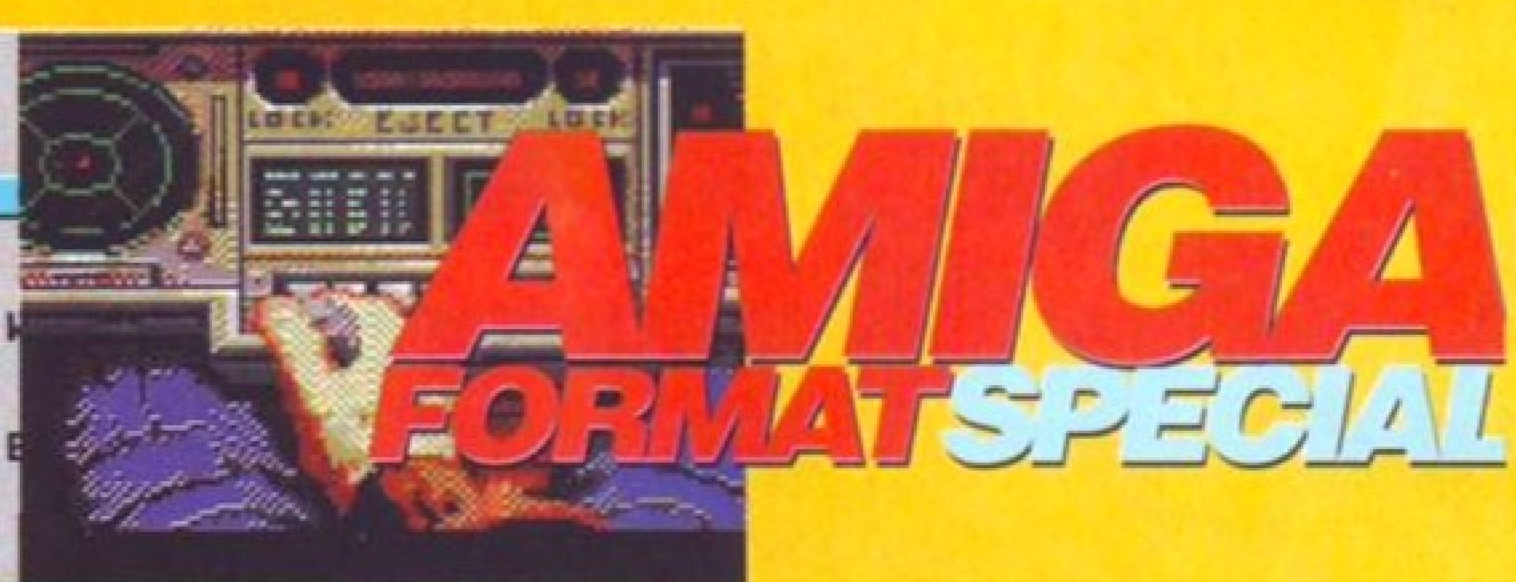
...and within the pages of The *Amiga Format Encyclopaedia* we'll explain what Workbench is...



...what exactly a RAM disk or for that matter any kind of disk (floppy or hard) call us over zealous but...



...we'll even explain the entire Amiga range to you, who invented it and why it's called an Amiga...



Oh and we'll also bung in lots of amusing stories about men called Jeff, chips called Denise...

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The Amiga Format Illustrated Encyclopedia

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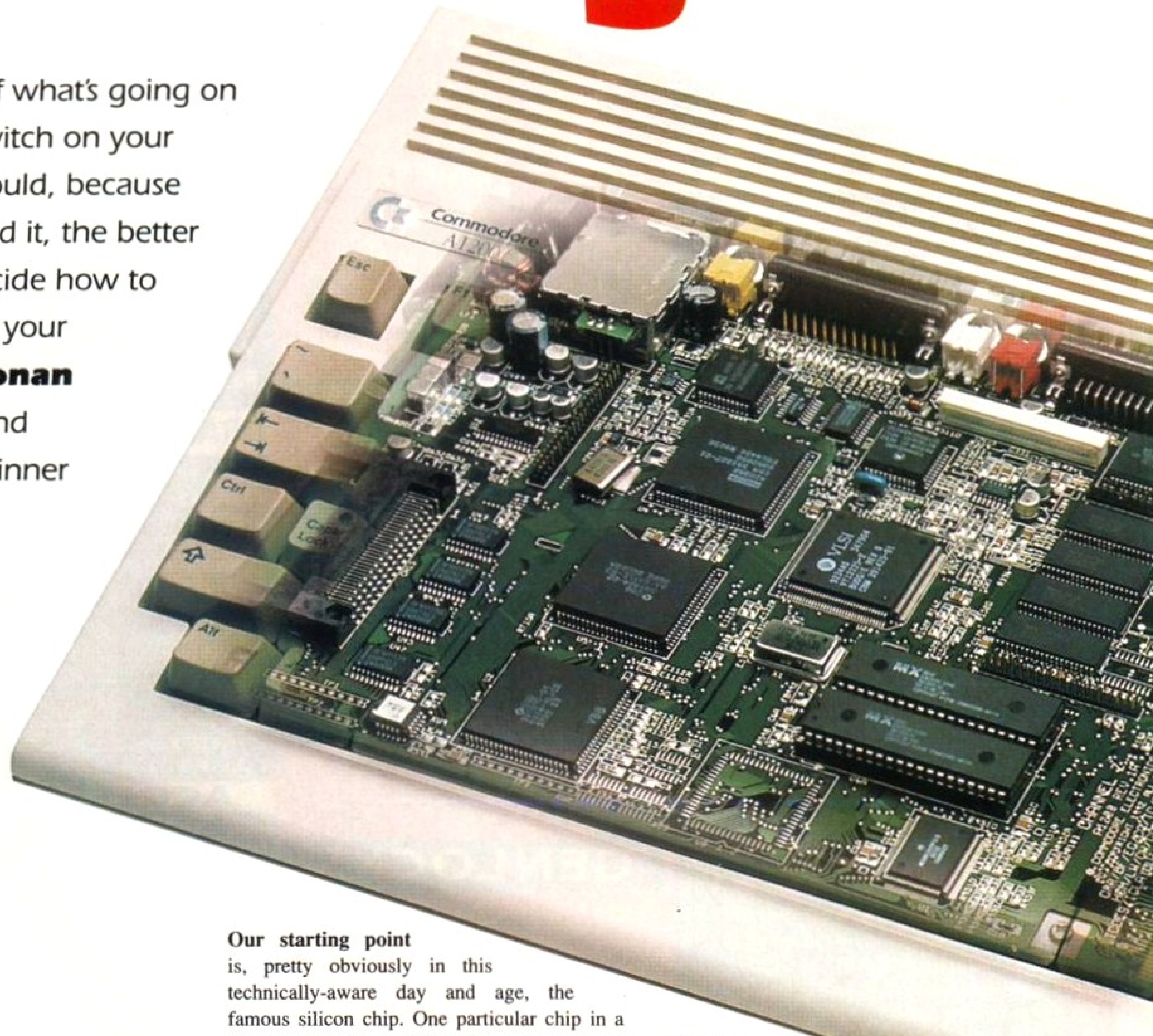
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How it Works: the Amiga

Do you have any idea of what's going on inside every time you switch on your Amiga? Perhaps you should, because the more you understand it, the better equipped you are to decide how to expand and how to use your machine. **Damien Noonan** takes the Amiga apart and reveals the secrets of its inner workings...



SO DO YOU understand your Amiga? Perhaps you should. It's easy to be confused by all the numbers and abbreviations that fly around when we're talking about the specification of an Amiga, but if you understand how your Amiga works, it all becomes clear.

Take the A1200 as an example. It features full 32-bit architecture, 2Mb of RAM, 68020 CPU running at a clock speed of 14MHz, 880K DS/DD internal disk drive, and a 96-key QWERTY keyboard.

It's a multi-tasking computer and includes the Commodore AA (or AGA) custom chip set for a palette of 16,777,216 colours, of which anything from 2 to 256 or even 262,000 can be displayed on the screen at once. It comes with Kickstart and Workbench version 3 and it has four-channel stereo sound.

Make sense of any or all of that lot? Well, even if you did, it's still worth reading on. Because we're going to explain how a computer works, and then we'll move on to show why the Amiga is different from – and superior to – most other computers. We're going to dive right down to the deepest levels of complexity, strip it down to nuts and bolts, here, so hang on to your hat!

> "Computers are not actually very clever at all. What makes them a marvel of modern technology is that a chip includes hundreds and thousands of extremely small electrical components"

Our starting point is, pretty obviously in this technically-aware day and age, the famous silicon chip. One particular chip in a computer is far more important than all the rest and, if the truth be told, actually is the computer. This chip is called the CPU, which means Central Processing Unit.

CPUs are created by microchip companies and then bought by computer manufacturers, who design their computers around the CPU chips. The CPU in an Amiga is made by a firm called Motorola, and in actual fact the very same chip is used by both the Atari ST and Apple Macintosh computers.

The Motorola 68000 (say 'sixty-eight thousand') CPU chip used in the A500 and A600 models of Amiga is the little brother in a 'family' of chips. Its big brothers are faster – they can process the same amount of data in less time, or a larger amount of data in the same time.

The family includes the 68020 (say 'six-eight-oh-two-oh') which is the CPU in the Amiga 1200 and the 68030 and 68040 in the A3000 and A4000 respectively. Motorola are currently working on the latest chip in the 68000 series, the 68060.

The higher-up chips, like the 68020 in the A1200, are faster than the plain old 68000 for two reasons. One: they are 32-bit CPUs rather than 16-bit CPUs. Two: they have a faster 'clock speed' which means that everything they do, they do faster.

Exactly how both these things affect the speed of the CPU will be explained very soon. First, let's look at what a silicon chip is and how it works.

The first thing to grasp about computers is they are not actually very clever at all. They do the very simplest of calculations using the very simplest electrical components. What makes them a marvel of modern technology is

How a silicon chip is made

Silicon is sand, the second most common chemical element on Earth, after oxygen. The reason it's used for chips is that it's what's known as a 'semi-conductor'. When it's pure, it won't conduct electricity, but when it's mixed with other substances, it can.

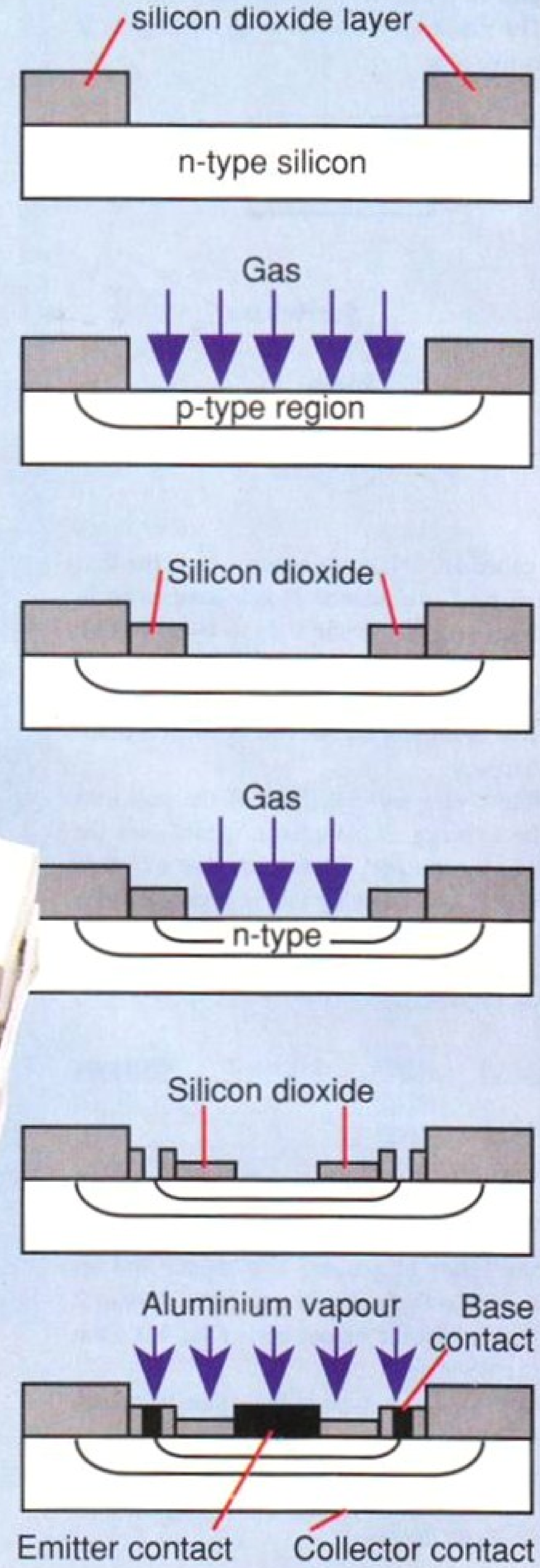
What's more, depending what kind of chemical you put in it, silicon becomes either positively charged or negatively charged. The addition of phosphorous creates 'n-type' negatively-charged silicon while boron creates 'p-type' positively-charged stuff. And, as you may know from studying electronics, it's the difference between positive and negative charges that makes the electrical world go round.

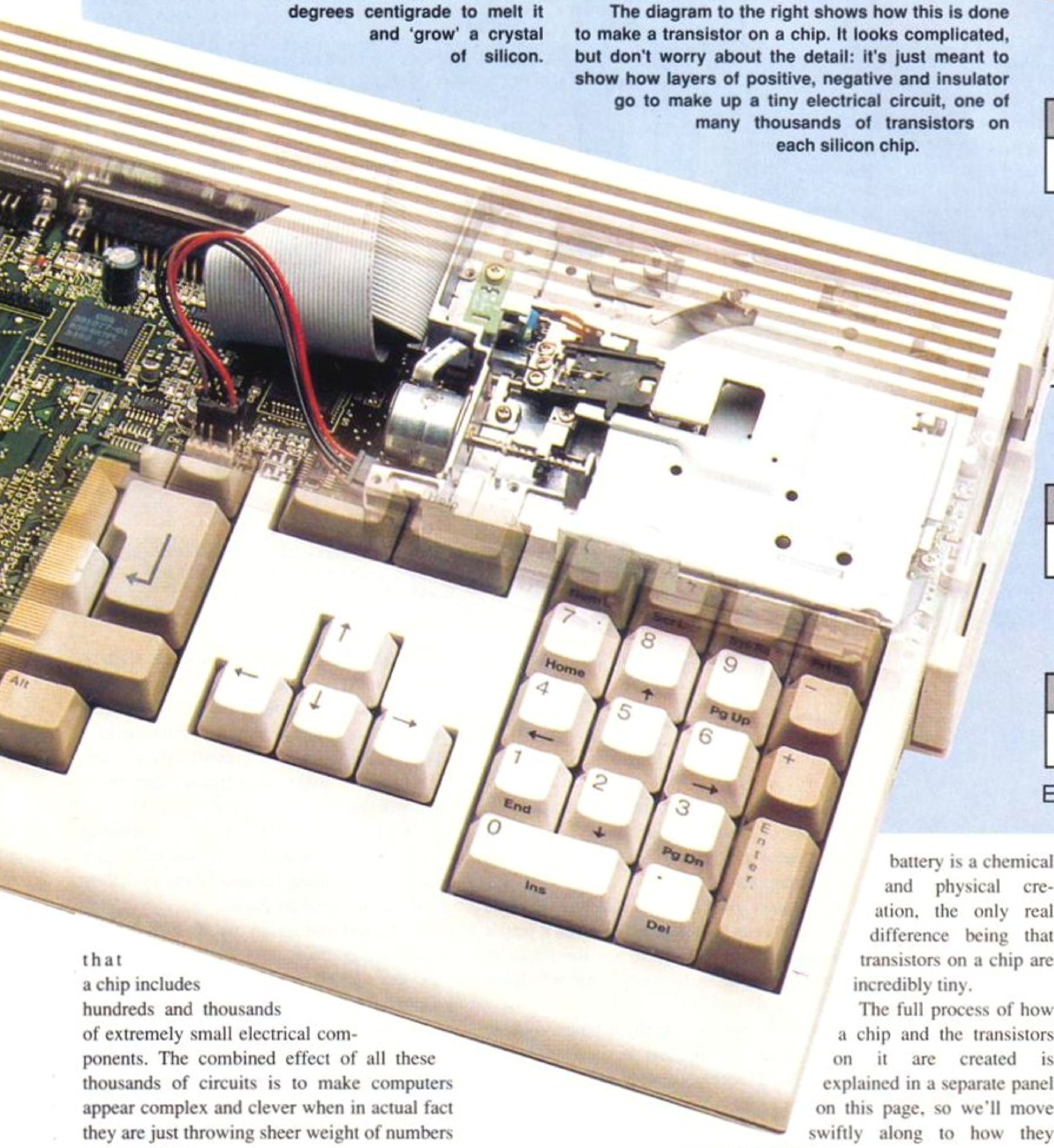
So, how to make a chip. First take 99.9 percent pure silicon, then heat it to 1,410 degrees centigrade to melt it and 'grow' a crystal of silicon. Cool it and and slice it into wafers. That's the base for your chip and it's about half a millimetre thick.

Next cover it with a layer of silicon oxide, by heating it and passing oxygen gas over. Silicon oxide is, as it happens, a lousy conductor. The chip-making process relies on building up layers of bits that can and can't conduct.

Next step is to etch holes in the layer of silicon oxide, which is done using a photo-etching process. Certain areas of the silicon are made bare again, and these are then treated with the necessary chemicals to make them p-type or n-type. The process is repeated, building up layers of insulating silicon oxide, positively charged silicon and negatively charged silicon to create transistors.

The diagram to the right shows how this is done to make a transistor on a chip. It looks complicated, but don't worry about the detail: it's just meant to show how layers of positive, negative and insulator go to make up a tiny electrical circuit, one of many thousands of transistors on each silicon chip.





that a chip includes hundreds and thousands of extremely small electrical components. The combined effect of all these thousands of circuits is to make computers appear complex and clever when in actual fact they are just throwing sheer weight of numbers at the problem.

The electrical components on a chip are mostly resistors, diodes and transistors, the transistors being far and away the most important. The many thousands of transistors on a chip are very much chemical and physical creations, in much the same way that an electrical battery is a chemical and physical creation, the only real difference being that transistors on a chip are incredibly tiny.

The full process of how a chip and the transistors on it are created is explained in a separate panel on this page, so we'll move swiftly along to how they work in a computer.

A transistor is, in effect, simply a switch. It's either on or off: when it's on, an electrical current is flowing from one side to the other. It's switched on and off by applying a voltage to a 'control wire'.

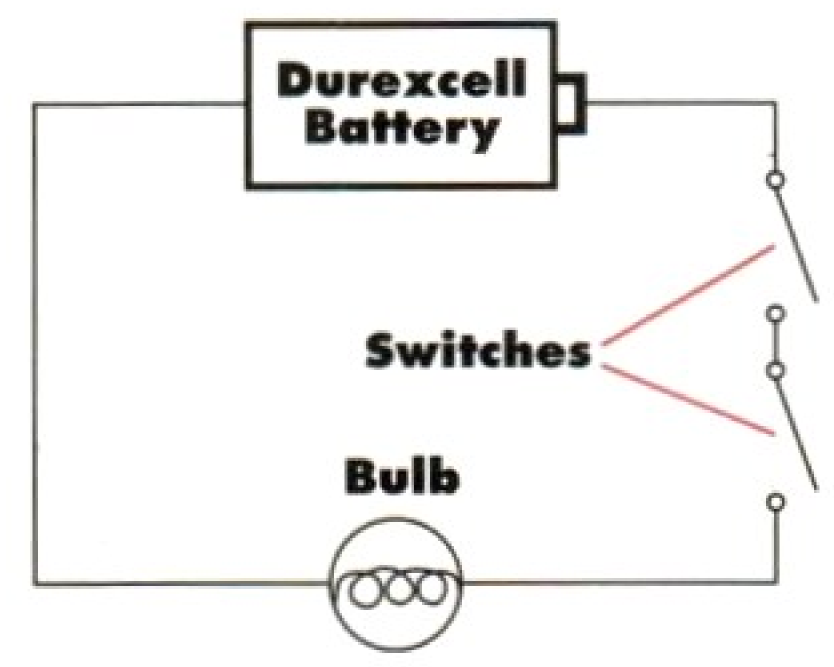
And this is where binary comes in. Computers, as I'm sure you know, work in the mathematical 'base 2' or binary, in which all numbers are represented by a one (1) or a zero (0). If current is flowing in a transistor – if the switch is 'on' – that is the equivalent of a 1. If the current is not flowing – if the switch is off – that is the equivalent of a 0. In this way, binary numbers (1 and 0) are represented by a physical state (electricity flowing or not flowing). That's why a computer is a machine. Clear so far? Right, let's see how simple electrical circuits can make calculations…

All the calculations a computer does are based around a concept called 'logic gates'. We'll see in a moment how different combinations of logic gates can be used to do complex calculations, but first here's how a logic gate

Continued overleaf

works. We'll demonstrate it by using two extremely simple electrical circuits that involve a battery and a bulb. Remember that transistors are just switches, so in our simple circuits we'll use switches instead.

The first kind is known as an AND gate. It looks like this.



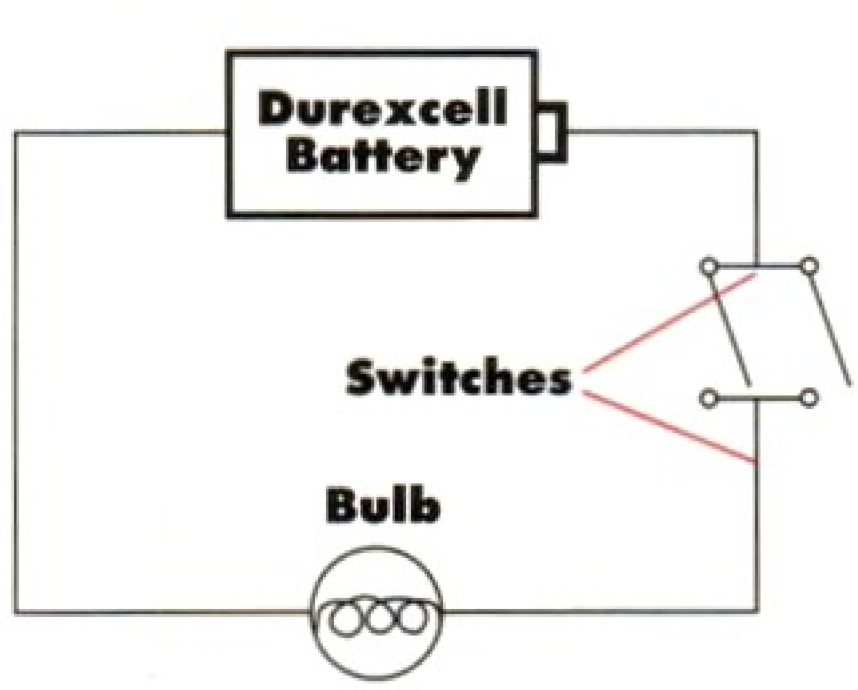
It's called an AND gate because both the first switch AND the second switch have to be in the 'on' position for the bulb to light. If both are off, nothing will happen. If the first is on and the second is off, nothing will happen. If the first is off and the second is on, still nothing happens.

Right, now try and think of the positions of the switches as being two 'inputs' and the bulb as the 'output'. Remember that a current flowing (a switch being on) is expressed as a one, and a switch being off is represented by a zero, and you can represent our AND gate circuit as follows:

Input 1	AND	Input 2	Output
0	AND	0	0
1	AND	0	0
0	AND	1	0
1	AND	1	1

So the result of passing two inputs into an AND gate is that only if input 1 AND input 2 are both 1 will the output be 1. OK, that's the AND gate sussed.

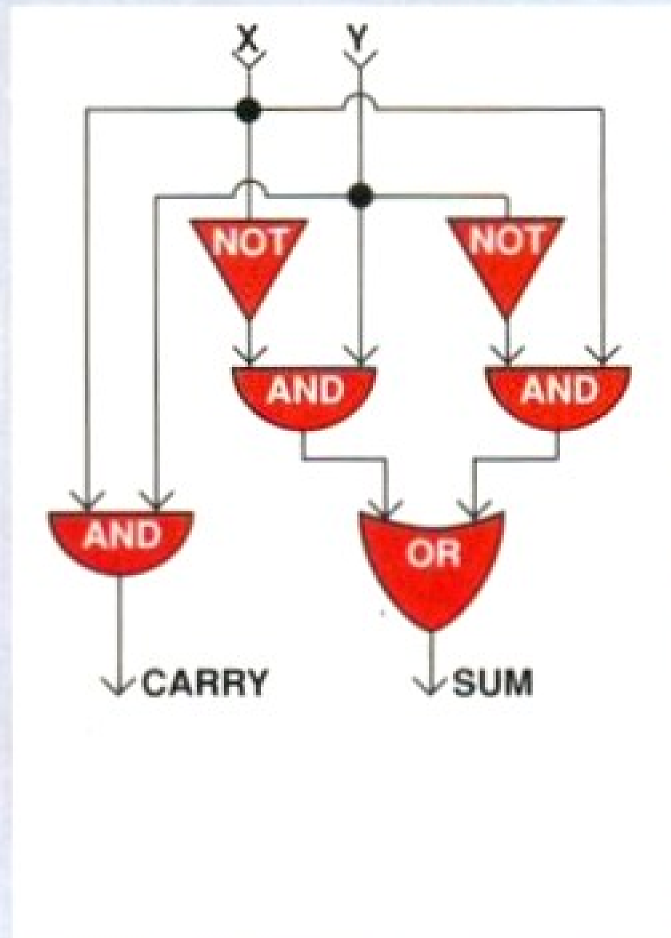
Our other basic type of logic gate is the OR gate. In this simple electrical circuit, the two switches are connected 'in parallel' (as opposed to 'in serial' in the first example). The circuit looks like this...



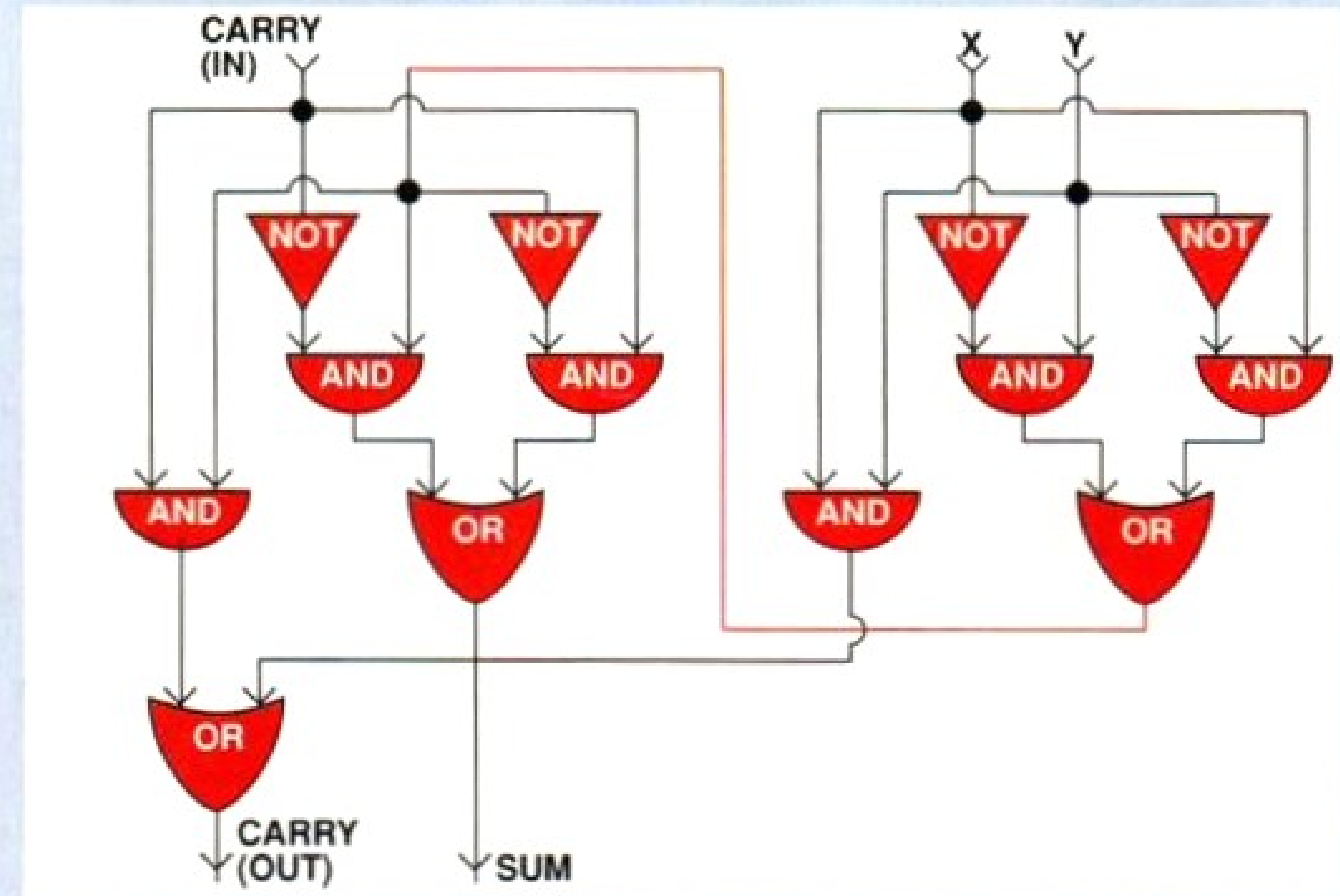
As you can see, with this second electrical circuit only one of the switches has to be on for the bulb to light up.

If switch one OR switch two is on, you get a light. That's why it's called an OR gate. Again, if we switch over to expressing this in binary maths and put it in a little results table, it looks like this...

How logic gates make maths



The HALF ADDER is so called because it can't handle 'carrying' a leftover digit.

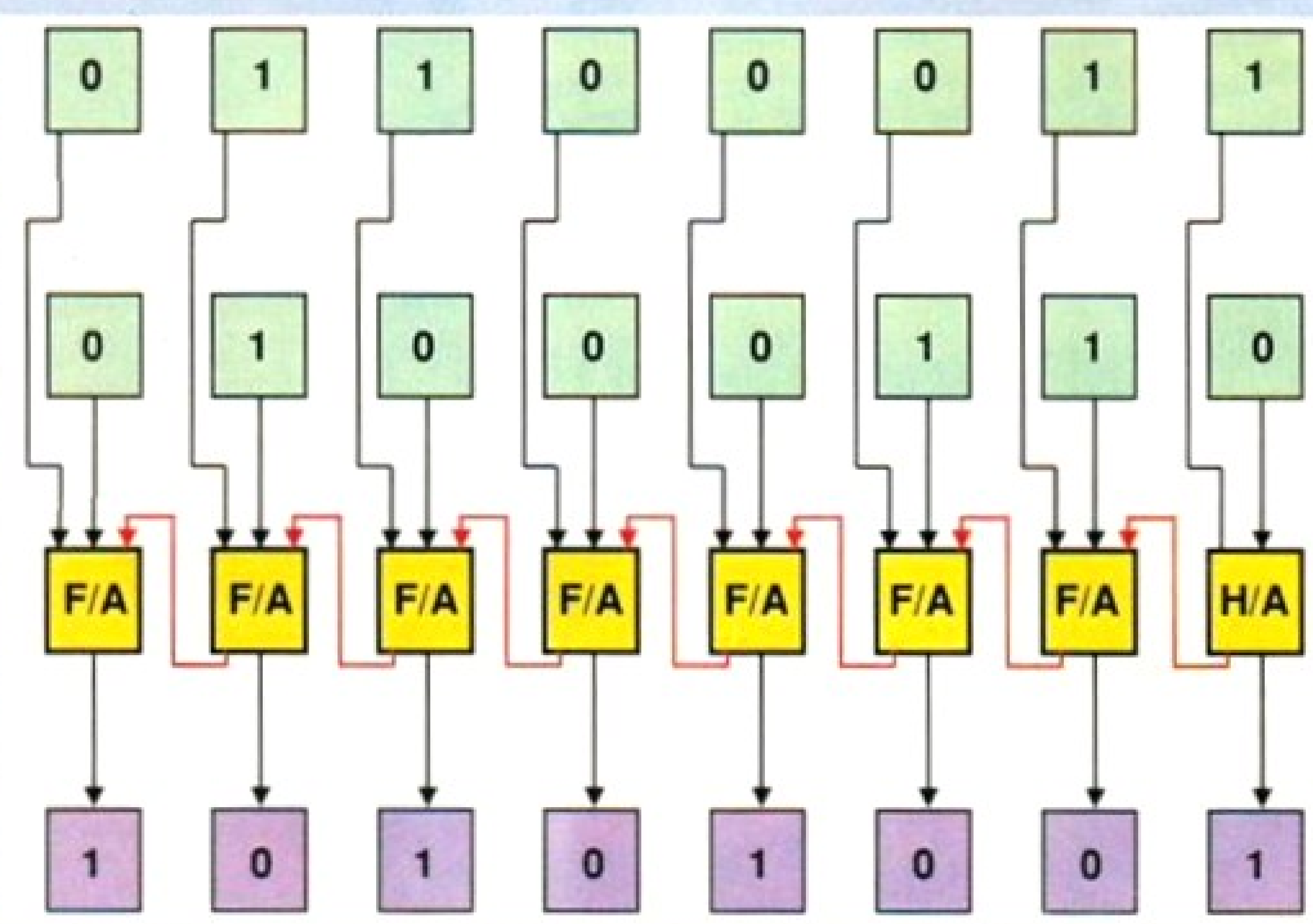


The FULL ADDER is a combination of two or more half adders and an OR gate and can happily handle a sum that involves carrying a leftover digit.

The concept of AND, OR and NOT gates (see the main flow of the article if you haven't read about these already) might seem a bit useless. But by combining just these three different types of gate (and there are other types) you can create a 'logic circuit' that does the vital job of adding binary numbers.

The diagrams here will give you an idea of how numbers are added using ANDs, ORs and NOTs. Try to remember what each type of gate does and try to follow it.

The best way to see how it works is by trying different values (only 1 and 0 are allowed, remember!) for the inputs and trace through the outputs to see what happens through the process – scribbling 1s and 0s in pencil on the diagrams is easiest.



And this is how you combine the two to create a complete logic circuit for adding an eight-digit binary number. Don't worry if you don't understand this (I don't!) so long as you can follow how the two above get the right results.

Input 1	OR	Input 2	Output
0	OR	0	0
1	OR	0	1
0	OR	1	1
1	OR	1	1

So that's how switches (or rather transistors) are used to make up logic gates. Logic gates might seem a bit weird, but they are the basis of all computer calculations.

Our next job is to discover how a set of logic gates can be combined to make a proper calculation. But first, there's a third type of gate we need to know about. This is called a NOT gate.

A NOT gate is actually simpler than an AND or an OR because it only needs one input. What it does is simply switch that input to the opposite, so with an input of 1 you get an output of 0 and with an input of 0 you get an output of 1. It's scarily reminiscent of Wayne's World language and it could be shown like this:

Input	NOT	Output
0	NOT	1
1	NOT	0

OK, at this point we're going to cheat slightly because we'll need a pretty complicated diagram to show you how these three gates are combined to make a simple calculation like addition. Skip now to the panel called 'How logic gates are used to do addition', then come back here very much the wiser.

OK? Did you get that? If you try inputting 1s and 0s into the half adder and full adder systems, you should be able to see how they come up with the right answer.

That's addition sorted out. So how do you do the other mathematical functions using logic gates? Well, we haven't got the space to go into it in great detail, but here's a brief idea.

Multiplication in binary is pretty easy, because at any stage you're only ever multiplying by zero, in which case the output is zero, or one, in which case the output is exactly the same as the input. All you have to do, then, is to shift the numbers about appropriately and add them together using the same adder gate sets. Subtraction is also pretty simple, because all you have to do is add a negative number. This means that, again, you can use the addition logic gates.

Continued on Page 36

EVERYONE KNOWS BUT INDY. AND HE'D BETTER LEARN FAST.

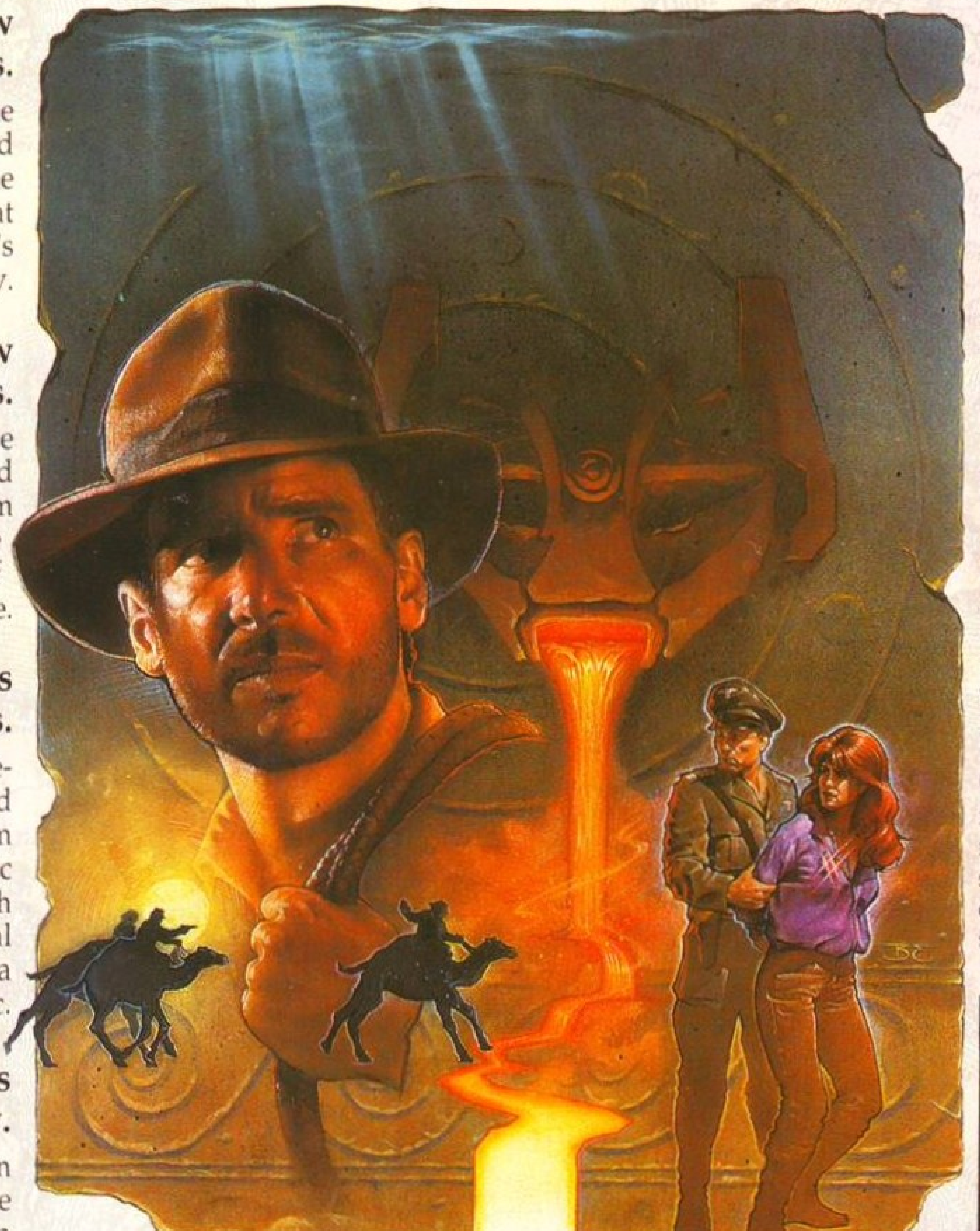
Plato knew about Atlantis.
In a lost dialogue he wrote about the famed city and orichalcum, the mysterious element that powered the Atlantean's amazing machinery.

The Nazis know about Atlantis.
They tracked down the lost dialogue, and realised orichalcum would yield them the ultimate weapon of the age.

Sophia knows about Atlantis.
She unearthed a mysterious necklace and beads of orichalcum during an Icelandic archeological dig with Indy. Their magical properties made her a psychic.

Everyone knows but Indy.
And he's got to learn fast. The Nazis are one step ahead of him - from Iceland to North Africa from the Azores to... Atlantis.

Available on:
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Coming soon on Amiga

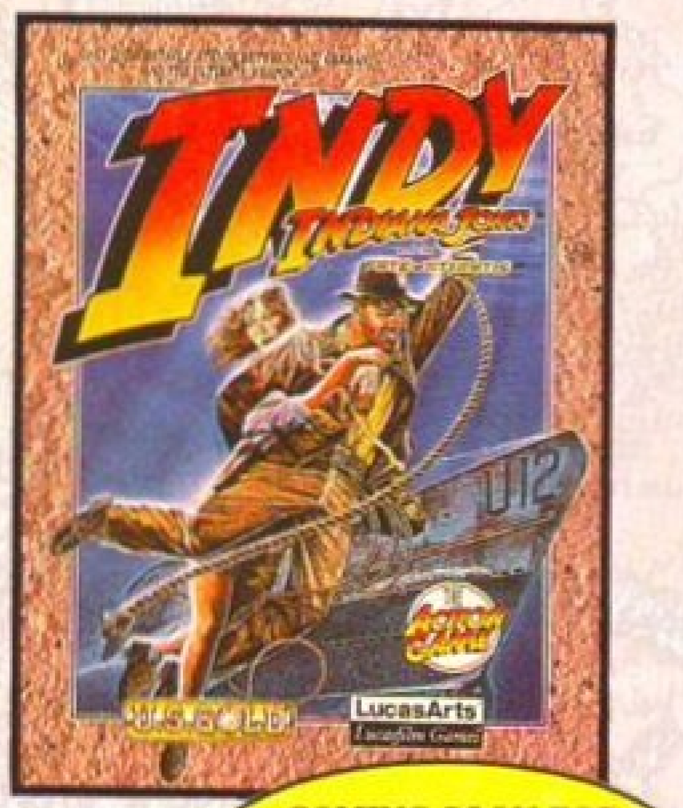


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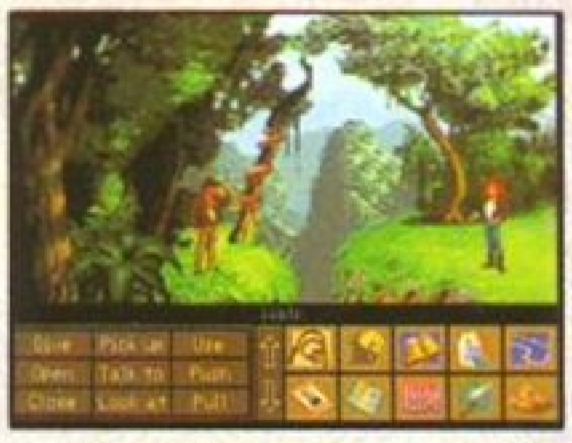
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Division is the only one that presents special problems. Essentially, the simplest way of explaining how it's done is that the number you're dividing by is added to itself and a count kept of how many times you added it, checking all the time to see if the number you've reached is greater than or equal to the one you're dividing by. It's complex, but again it uses the adder circuits.

All the logic circuits for these operations are kept in an area of the CPU called the ALU (Arithmetic Logic Unit). Let's take a look at what else makes up the CPU.

Well, as we've just said, there's the ALU which does all the calculations. As well as that, there are a number of areas of storage known as registers. These use transistors to store binary data, 1s and 0s, in exactly the same way as RAM does, which we'll look at in a minute.

Also in the CPU is something called the program counter, which stores the next instruction ready to be executed by the ALU. Then there's the control block, which is 'hard wired' (set up permanently in the manufacturing process) to interpret the instructions that are passed into the CPU.

Last, and by no means least, we have the CPU's connections with the outside world. These are the address pins, the data pins and the control pins. We'll see how these work in a moment: first, let's explain how RAM works.

If the CPU is the computer itself, and therefore the most important part of the Amiga, RAM (Random Access Memory) is the second most important part. It's here that all the data and instructions, in binary, which the CPU will process are loaded and stored.

The full name, Random Access Memory, doesn't mean an awful lot on its own, but there's one important thing to remember about RAM and that is that it's not permanent. It will only hold data as long as it is being supplied with power. So when you switch off your Amiga, all the data stored in RAM disappears.

RAM chips are just silicon chips packed full of transistors. Each transistor is switched on to indicate a binary 1, or switched off to indicate a binary 0. In this way a RAM chip can store binary data.

The RAM chips, like the CPU, have lots of pins on the outside to connect them to the outside world. Once again, these pins are made up of address pins and data pins, as well as a power supply and an earth.

The address pins are how the CPU finds the particular chunks of data that it needs. Each single transistor on the chip has its own unique number, and that number is called its address. So when the CPU needs some data from a RAM chip, it sends out an address signal to RAM telling it which address it wants the data from.

This signal passes along a set of wires called the address bus – I've no idea why it's a 'bus', unless it's because data travels along it – and reaches the RAM's address pins. The data from RAM is then sent back from the data pins on the RAM chip, via the data bus (another set of wires) to the data pins on the CPU.

All clear so far? Now, this is where we learn why the A600 is a 16-bit computer and the A1200 is a 32-bit computer. It's because the Motorola 68000 CPU in the A600 has 16 data pins and can therefore load 16 bits of information – 16 binary 1s or 0s – at one time. The 68020 CPU in the A1200 has 32 data pins

Continued on Page 39

What those mysterious numbers and letters mean

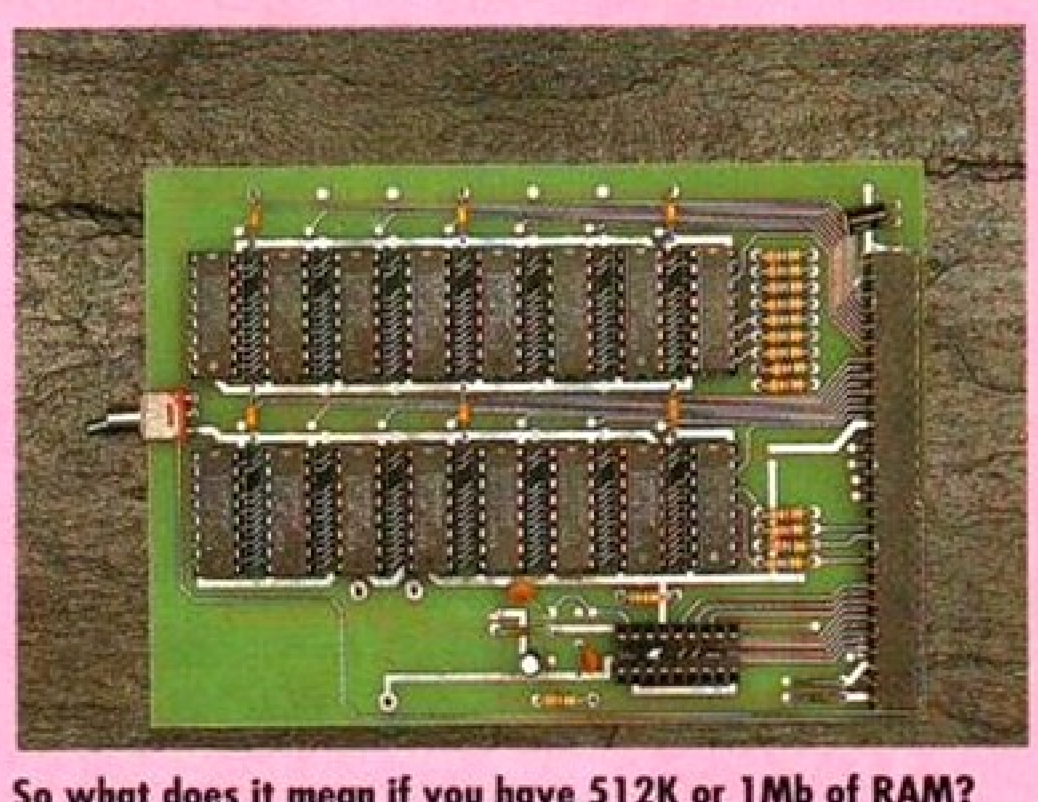
512K? 20Mb? Two Megabytes? Bits, bytes, Kilobytes? What is it all about, eh? Well, it's actually all quite simple. Every number associated with computers is based on binary (base 2) and it works like this.

A single binary 1 or 0 is called a 'bit', which is short for 'binary digit'. Eight bits make what's called, for no apparent reason, a 'byte'.

This kind of quantity of data is pretty appropriate to the CPU, which is working on 16 bits or 32 bits at a time. But when you're considering the amount of data stored on a disk, or that makes up a program, you need much bigger numbers.

Step up, the Kilobyte. As you might expect, the Kilo on the start has to do with thousands, as in 'Kilogram' = 1,000 grams or 'Kilometre' = 1,000 metres. Only being to do with binary, it doesn't actually mean 1,000 bytes: it means 1,024 (which is two to the power of ten). The usual abbreviation for a Kilobyte, 1024 bytes, is K: so a disk's capacity of 880K is 880 x 1024 x 8 = 7,208,960 bits.

Next step up is the Megabyte, which as you might expect is based on a million bytes, but once again is binary – so a Megabyte is actually 1,024K. The original A500 had 512K of RAM, whereas the A600 has twice as much – a Megabyte. The Megabyte is abbreviated to Mb, as in 1Mb of RAM, and is also colloquially called 'a Meg'. One last thing worth noting is that occasionally, particularly when talking about chips, you'll see Kilobits (Kbits) and Megabits (Mbits) referred to. Because there are 8 bits to a byte, to find out what a Kbit or Mbit number means in real money, all you have to do is divide by eight – so an impressive-sounding 8 Mbit Sega game cartridge is actually only a normal 1Mb.



So what does it mean if you have 512K or 1Mb of RAM? The secret is how many 1s or 0s these chips will store.

Disk

The basic idea of disk storage is almost exactly the same as audio or video cassettes – information is recorded magnetically onto a thin coating of magnetically sensitive metal oxide. The difference is that in a disk the magnetic coating sits on top of a disc of plastic – obviously! – rather than a ribbon of tape.

Like a tape player, a disk drive has a 'head' to record and play back (write and read) data. The disk drive uses the same head for read and write, and has two heads, one above and one below the disk. This means it can read and write data to both top and bottom of the floppy, so it's what's called a 'double-sided' disk drive. Floppy disks often say 'DS/DD' on them, which stands for 'double-sided, double density'.

A 3.5" (three-and-a-half-inch, the diameter of the disk) floppy needs to be formatted (prepared) for use as an Amiga disk before you can store anything on it. Amiga-formatted disks can store a maximum 880 Kilobytes of data (if you're not sure about what a Kilobyte is, have a look at the separate box on the left: 'What those mysterious numbers and letters mean').

Some disks are labelled 'HD' which stands for 'high-density' – these are also distinguished by an extra hole on the corner opposite the write-protect tab. High-density disks can store twice as much data when they're used in a special disk drive – so far, only the Amiga 4000 has a high-density floppy-disk drive fitted.

The data on a disk is organised in concentric rings and not, as you might expect, in a spiral like an LP record. Each ring is called a track, and the Amiga fits 80 tracks on a disk (numbered 0 to 79 – you can see them counting down when you're formatting a disk).

Within the tracks, data is organised in blocks, a block being 488 bytes. Particularly important are the first two blocks of Track 0 – one on the top of the disk, one on the lower – which together make up the 'bootblock'. Data stored here tells the CPU whether this disk is self-booting and if that's the case, starts it running a program.

Also important is the 'directory block' (again, it's actually more than one block) which lives on Track 40. This stores a record of where on the disk files are kept, so the disk drive always looks here first when it's trying to find a file.

Incidentally, this is why it's possible to 'undelete' files you've accidentally

drives explained



Even though a hard drive can store much more data – a typical drive might be about 40Mb storage capacity as opposed to less than 1Mb on a floppy – it's essentially very similar. The main difference is that, as the name implies, the disc itself on which the magnetic medium is laid is hard – it's made of metal and referred to as a 'platen'.

Because the disc is hard, and because the mechanism is sealed in a vacuum, the whole thing can be much, much more accurate: which means that each track is much smaller, many more tracks can be crammed into the same space and as a result much, much more data can be stored. Because they spin much faster, hard drives also load and save data much more quickly than floppies do.

Hard drive units come in two main types, defined by how they connect to the Amiga. IDE drives plug in with a simple cable to the connector inside an A600 or A1200: these drives come in two sizes (3.5" and 2.5") and were originally designed for portable computers, so they're small and have a low power consumption.

The other type of drive attaches via a SCSI (Small Computer Systems Interface) connector to either the edge connector of an A500 or the card slot of a larger Amiga. This type of drive tends to use a kind of hard drive unit known as a Quantum, which is then attached to a SCSI interface and the appropriate Amiga casing and connectors by an Amiga peripheral manufacturer like GVP.

These drives are more expensive because you pay for all the extras over and above the basic hard drive unit, but SCSI drives tend to be quicker at loading and saving data than IDE ones.



If you've never taken a floppy disk apart, you should do. It's worth the few pence a disk costs to understand what's inside the things.

The metal shutter is pushed back when you put the disk into the drive – it covers the hole into which the disk drive head protrudes to read and write data. Bend the shutter and remove it, and the little spring that keeps it closed will ping off across the room.

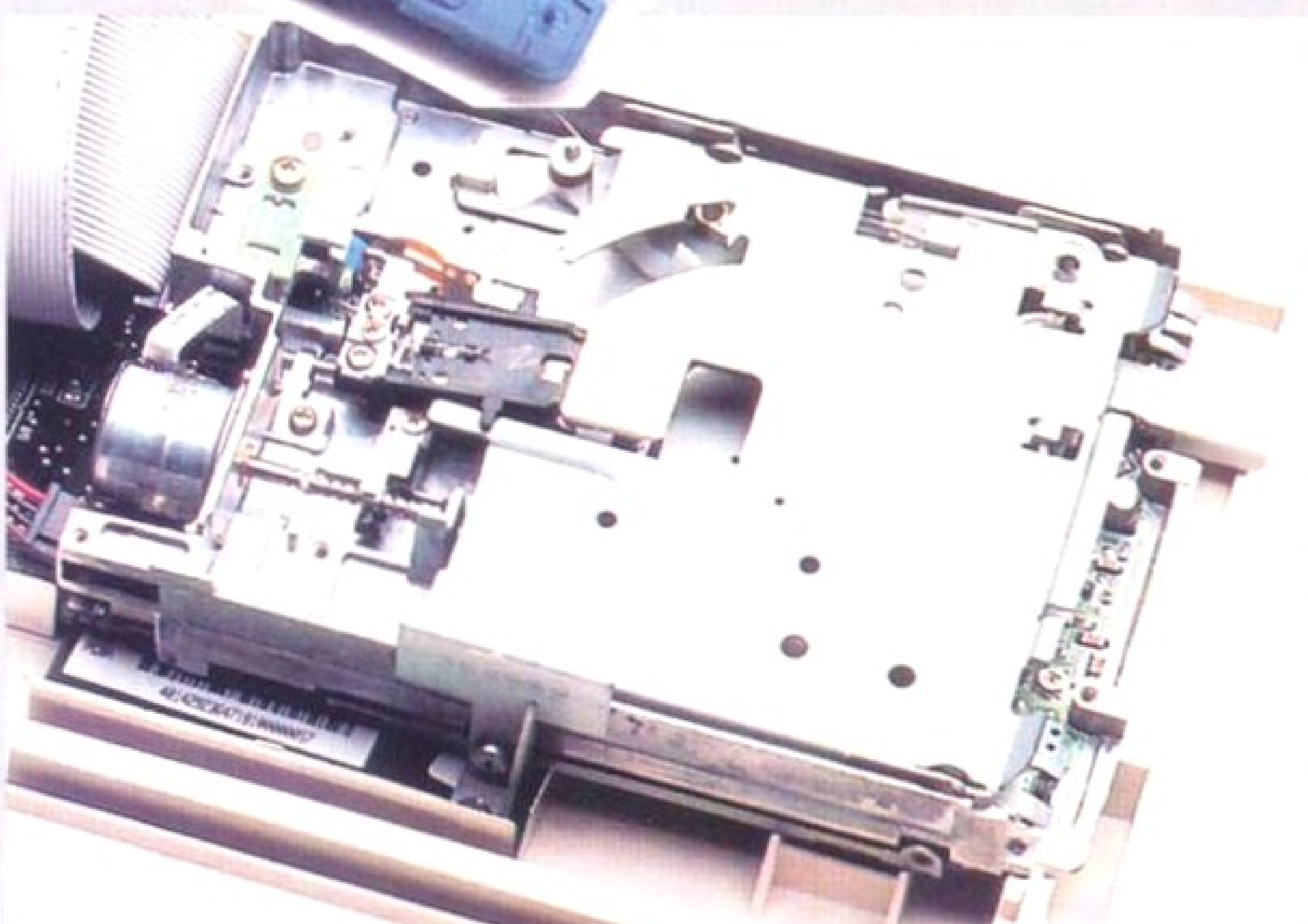
Now you can split the two halves of the case apart. Inside, there's not a great deal there – the floppy disk itself, a couple of 'cushions' of soft paper to make things smooth when the disk is spinning and the write-protect tab, which is just a bit of plastic.

Now you understand why these disks are called floppy. Although they have a hard plastic case, the circle of Mylar plastic is itself quite bendy. It's attached to a metal 'hub', which has holes in: pins in the disk drive stick into these holes to spin the disk.

deleted: the Amiga wipes the record of the file from the directory block, but doesn't actually wipe away the data itself.

A clever program (and these are available in the PD as well as commercially, so they're not expensive) can look through the whole disk to see if the actual data is still there, even though there's no record of it in the directory. An example is the extra CLI command Undelete, which is available on many PD collections.

One last point about disk drives, and especially about hard drives: their storage capacity is no longer generally referred to as 'memory' even though they do remember data. If people talk about the memory in your machine, it's usually RAM they mean. So an A600HD with 1Mb of RAM and a 20Mb hard disk drive has 'a Meg of memory and 20 Megs of hard disk space,' in common parlance. Not 20 Megabytes of memory.



The disk drive mechanism is quite simple. There's a pin on a spring that checks to see that the write-protect tab is off if you want to write data to the disk; there's a motor to spin the disk; and there's the two read/write heads, one above the disk and one below.

Unlike a hard drive, a floppy disk only spins when it's actually reading or writing data. That's why you should always make sure the drive light is out before flipping a disk – if you take the disk out while it's spinning, both the disk and the drive may be damaged.

and can therefore load 32 bits of data at one go, which makes it substantially quicker. Older computers, like the Commodore 64, had 8-bit CPUs which made them substantially slower.

There's one other thing that controls how fast a CPU is, and that's called its clock speed. The 68000 in the A600 is 'clocked' at 7.14 MHz (MegaHertz, which means 'millions of cycles per second'). This simply means that the clock 'ticks' (or actually, puts out an electronic pulse) 7.14 million times every second.

Everything that the computer does is controlled by the speed of this ticking clock. It keeps things organised. Only one instruction is allowed to be carried out each time the clock ticks. That instruction might be sending an address to RAM, receiving data from RAM, or performing a mathematical operation. Whatever the instruction is, the CPU can only do one each time the clock ticks. It's from these simple building blocks – moving data about and simple mathematical calculations – that even the most complicated program is made up.

If an Amiga has a CPU with a faster clock speed, it can process more instructions in the same amount of time. So the A1200, with its 68020 CPU clocked at 14MHz, is twice as fast at processing data. Remember, though, that the 68020 CPU can also load twice as much data at a time (32 bits rather than just 16) so this makes it faster yet.

Because all the CPUs in the Motorola 68000 series are compatible, you can fit a faster processor to your Amiga to make it run faster. This is what's known as an accelerator card. The GVP A530 hard drive for the A500, for example, includes an accelerator card featuring a 68030 processor clocked at 40MHz, which makes it much, much faster than a normal 68000.

There's one other important term to introduce here, and that's the word architecture. This word is used loosely to describe the way in which the designers of a computer have arranged all the elements that make up the computer and the way they are all joined together.

The important difference between the A500 or A600 and the A1200 is that the 1200 has a full 32-bit architecture. This means the connection from the RAM chips to the CPU – the data bus – is 32-bit, whereas on the A500, A600, A1500 and Amiga 2000 it is only 16-bit. The effect this has is that if you fit a 32-bit CPU to one of these Amigas, it still only has 16-bit data access and is therefore not as quick as potentially it could be.

Accelerator cards for the older machines can still run very, very quickly, so it's not something you ought to worry about. We mention it mainly to explain why we refer to the A1200 (and, indeed, A4000) as a 'true 32-bit' machine.

One last point. The other nice thing about the CPUs from the 68020 upwards is that they don't have to work on their own. They can run in tandem with another chip called a 'maths co-processor' or 'Floating Point Unit', or FPU for short. There are two different FPU chips available, with the numbers 68881 and 68882, the latter being the more powerful.

The FPU does just one type of calculation work, but does it very well indeed. It deals with something called 'floating point' calculations. For reasons to do with the way binary maths works, which would be far too complex to explain here even if I understood it myself, programmers use all kinds of different ways of expressing numbers, floating point being one of them. The name means that the position of the decimal point doesn't remain the same, it floats about.

Anyway, that's really too much to go into here. The point is that certain kinds of programming, particularly 3D and ray-tracing, rely heavily on floating point calculations and that an FPU means the Amiga can handle them much more quickly, because it takes some pressure off the CPU. The A1200 has a space on the circuit board for an FPU to be soldered on, though it doesn't currently come with one. Most accelerator cards have an FPU as an optional extra.

Time for a quick recap. By this stage, you should have a pretty decent idea of how the two basic elements of the Amiga – RAM and the CPU – work. By sending out address signals to RAM via the address bus, the CPU gets it to send the exact data it needs to it down the data bus. It stores this data in a register in the CPU, and it can then get the ALU to perform a calculation on it – say, add it to the contents of a second register. The result would be stored in another register.

So how do you program anything worthwhile? Well, let's take a look at how that works.

The CPU is dealing in pure binary. When it's built, certain sets of binary digits – certain numbers, in other words – are set aside as instructions. If the CPU pulls

Continued overleaf

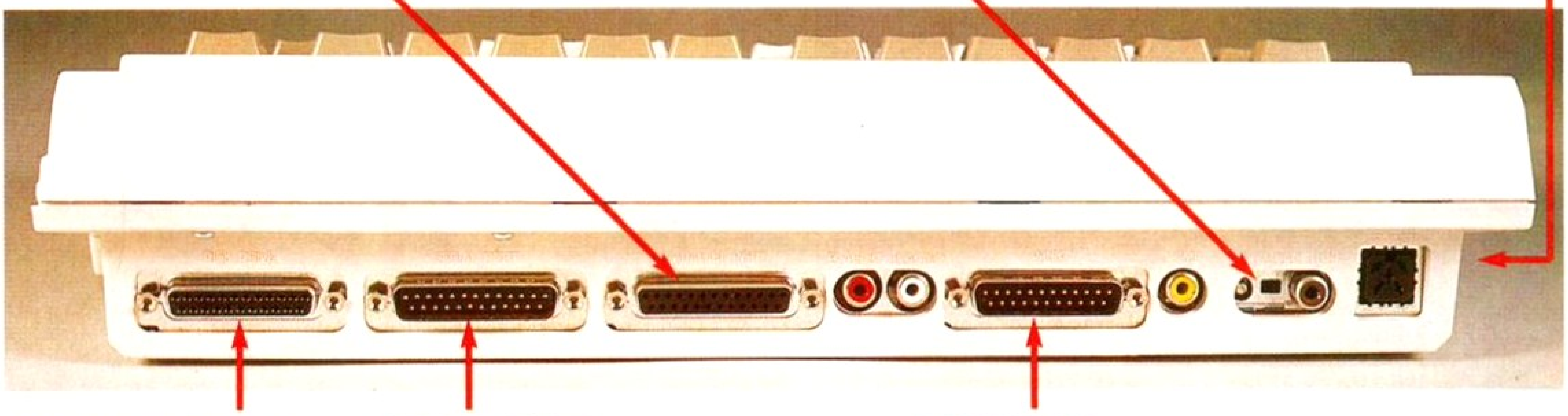
Interface ports – talking to the world

The Amiga has all manner of plugs and sockets, not only on the back but also inside the machine. An interface is simply a device that translates Amiga inputs and outputs into a language that can be used by other computers or by different kinds of computer hardware. Here's a quick run-down of what the Amiga's interfaces do...

PARALLEL PORT
Another standard kind of interface, this time something known as a Centronics. Ideal for modems, but also used by sound samplers, video digitisers and scanners because it's a fast way of shifting data into the Amiga.

RF OUTPUT
Standing for 'radio frequency', RF is the kind of TV signal that your TV's aerial socket expects to get. Lower quality than RGB is evident in distorted colours and less precise images.

PCMCIA 'CREDIT CARD' SLOT
A new standard that arrived with the A600, this is for hardware expansions on compact cards, RAM expansions being the most popular type. It's a standard developed by the world of business computing and should give the Amiga a range of cheap, easy-to-fit peripherals over the next couple of years, though it's still in its infancy right now.



DISK DRIVE PORT
Plug your second disk drive in here. Includes a power supply for the disk drive, too.

SERIAL PORT
This is a standard type of interface used by many kinds of computer and by lots of other kinds of hardware: it's an RS232 port. It's used mainly for connecting printers.

RGB VIDEO
Outputs an RGB (Read, Green, Blue) signal for use by a monitor or a telly that has a SCART (also called Peritel or Euroconnector) socket. RGB is the purest kind of TV signal: a 'composite' or 'RF' signal mixes colour information up and then decodes it later.

these numbers out of RAM, it recognises them as instructions and executes them.

The 68000 CPU is, therefore, set up at manufacture with a particular set of instructions that it can perform and, pretty obviously, this is known as the CPU's 'instruction set'. Simple enough.

The programmer could, if he wanted, program entirely in binary. This, strictly speaking, is what's known as 'machine code' because it uses the binary codes of the CPU. Since even the simplest program would take pages of 1s and 0s, however, it would be absolutely impossible to tell what the heck you were doing, or to read the code.

To make it easier, a 'low-level' programming language replaces the binary instructions with simple words like 'add' and 'move'. This is known as Assembly Language or just Assembler. A low-level language is as close to the CPU's instruction set as a programmer gets, and is therefore the most complicated type of programming language to learn. Other 'higher-level' programming languages, like Basic and C, replace sets of Assembler codes with simple phrases in the English language, so they're easier to learn.

The programmer writes his program in a program editor, which in effect is just a word processor. The finished program is then run through another program called a compiler, which translates the program into the instruction codes used by the CPU.

Right, back to our question of several paragraphs ago. How can you possibly write a complex program like an arcade game using simple instructions to move data around and do simple maths to it? Well, although the CPU's instruction set is somewhat more complicated, the basic building blocks of programming are that straightforward.

Supposing you're looking at the code for an arcade game, for example, where a sprite is being moved around the screen under joystick control. It's easy to see that the current position of the sprite on the screen can be stored as a number, because the screen is a grid of little squares.

The top-left corner of the sprite might be at 100 across and 40 up, for example. So that number will be stored in RAM somewhere.

Suppose we want to see whether the joystick has been used to move the sprite sideways. The first instruction in your program would check the joystick input to see if the joystick had been moved to the right. If so, the CPU might fetch the position of the sprite from RAM and store it in a register. It might then set the number in another register to 5, then add the two registers together. Then it could store the new number in RAM in place of the old position of the sprite across the screen. It could then ask the output parts of the computer to display the sprite on the screen again in the new position, 105 across and 40 up.

It's a simple and entirely inaccurate example of what goes on, but it shows how two simple Assembler instructions, 'move' to move data between RAM and registers on the CPU, and 'add' to add figures together, can go to make up the basics of a program.

It becomes fairly obvious at this stage that there's a couple of things we've ignored quite vastly. After the CPU, which does all the work, and RAM, which stores all the data, the two most important parts of a computer are the input and output.

Input is anything that enters data into the computer: the most obvious input devices are the internal disk drive, the keyboard and the mouse or joystick.

Output is anything that takes data from the computer: the disk drive again, if you're saving data to it, the screen display and a printer, for example.

Any piece of equipment that the computer inputs data from or outputs data to is known as a 'device'. Collecting data from or sending data to these devices is handled by the CPU in more or less exactly the same way as collecting data from or sending data to RAM. In other words, it's all done by instructions in the CPU, which must be written into the programming code.

It may seem, for example, that the joystick is controlling a program; for this reason, you may imagine that the CPU is forced to listen to what the joystick is trying to tell it. But no. In fact, the CPU is checking every so often to see if there's any input from the joystick, and only when it's told to by the program.

Because it all happens so quickly, you don't really notice this effect. Most games will be checking the joystick round about 25 times every second. That's because the animation which makes the screen display appear to move involves displaying 25 slightly different screens every second. So every time it draws a new screen, the game program needs to know if you're trying to move the sprite that's under your control.

It's easy to see that loading data from disk is also handled by an instruction in the program. Data on a disk is stored with addresses that are quite similar to RAM addresses, so a program instruction to the CPU might tell it to load data from a particular address on the disk and put it in a particular address in RAM.

One important question that might pop into your head at this point is what happens when you first switch your Amiga on. If there's no program in RAM yet to tell the CPU to load data from the disk, how does it know to do it?

Well, this is the job of the Kickstart chip in your Amiga. Kickstart is what's known as a ROM (Read Only Memory) chip. This is very much like a RAM chip, except that all the data in it is permanent and is fixed when the chip is made. It doesn't need a constant supply of electricity to prevent it losing its data. The

Continued on Page 43

What are Workbench, the CLI and the Shell?

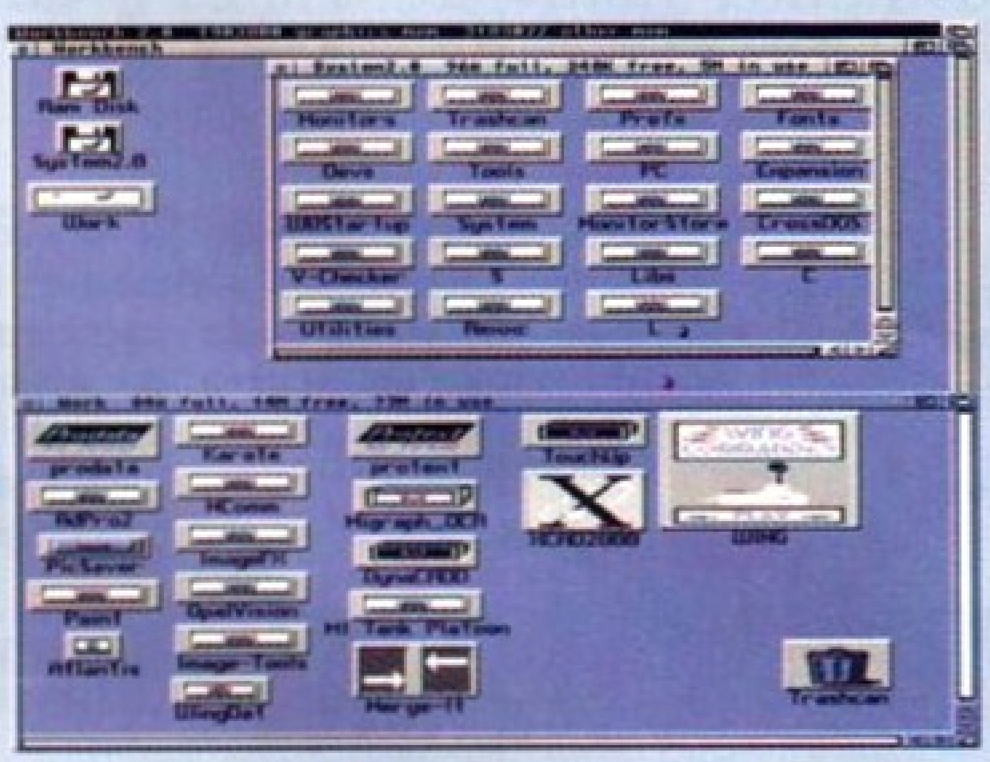
As you'll know if you've read the main piece of this article, the Kickstart chip leaps into action when you switch the Amiga on, running several programs through the CPU to set up the basic workings of the Amiga.

The most important functions of these programs are threefold: to get the screen display working; to enable programs to load from the disk drive; and to enable programs to read and write data from and to the disk drive. They're known collectively as the 'operating system' (o/s for short) or, more specifically, as AmigaDOS (Amiga Disk Operating System).

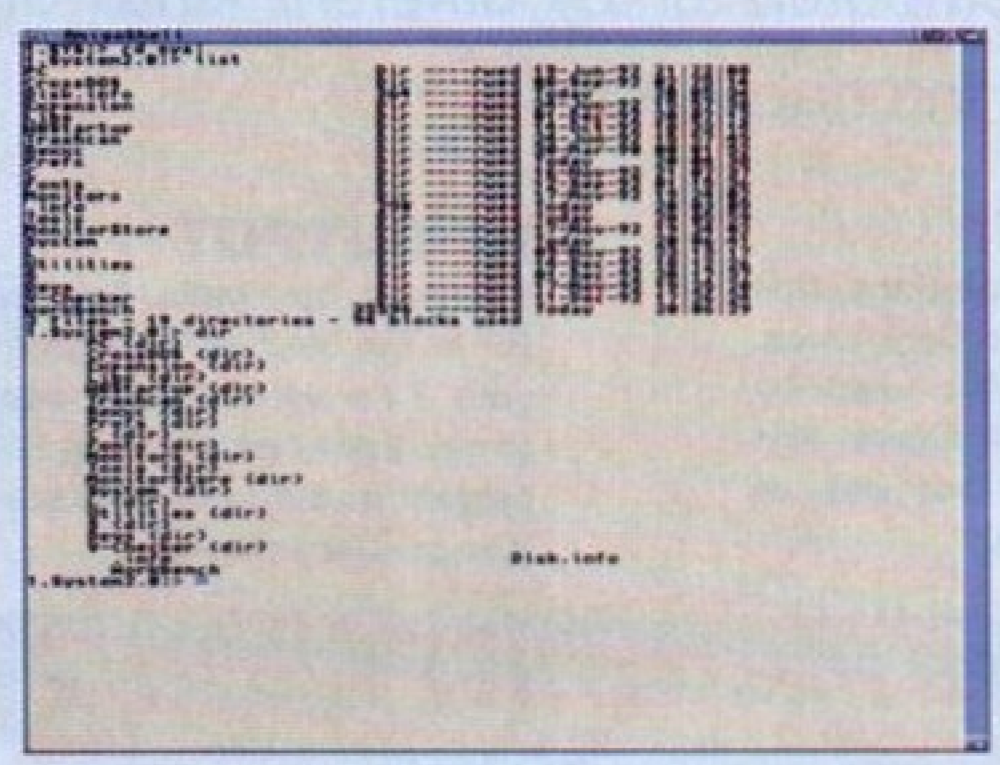
The first thing most games will do is 'kick out the operating system', clearing the RAM of all the operating system's programs. This is because games programmers only need to use a few of its features, and those they can do more efficiently themselves; and because they need all the RAM they can get in order to do lots of whizzy things. Some games, on the other hand, particularly those that use a hard drive, do use the operating system, and this is known as 'o/s legal' software.

So what's the Workbench disk for, then? Well, basically it provides what's known as a 'user interface'. All this means is that it enables you to use all the programs of AmigaDOS.

The Workbench disk gives you two different ways of controlling AmigaDOS: either from the Workbench screen or from the Shell. Both are different kinds of interface. The Shell is also known as the CLI, which stands for Command Line Interface, and it's so called because you use it by typing in lines of commands, then pressing the Return key to enter them.



The Workbench disk's most obvious feature is the Workbench screen itself. This is a 'graphical' interface' which lays everything out in front of you.



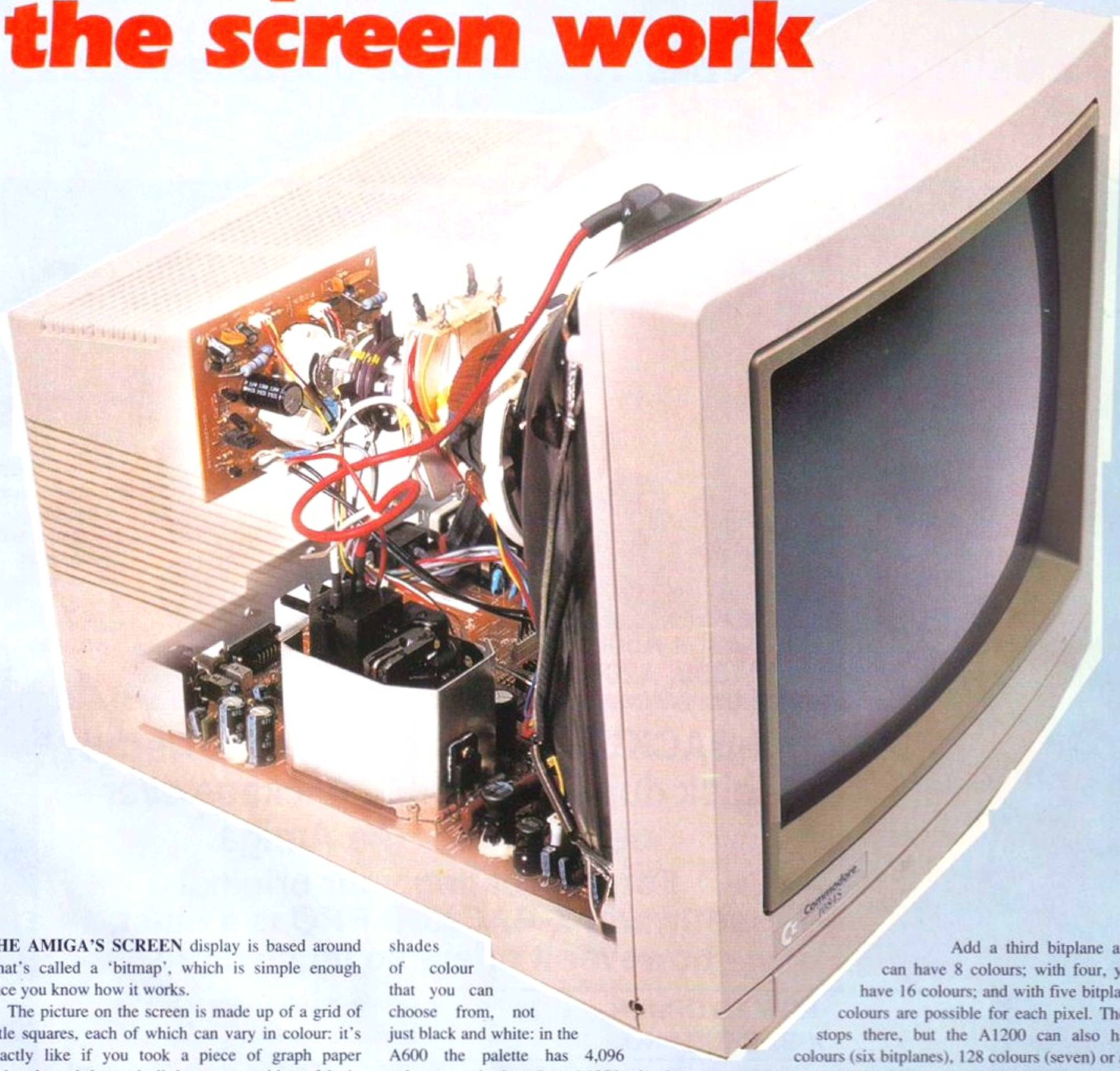
The more complicated alternative is the Shell. Here, nothing is shown and you have to be able to call things by their right names in order to do anything with them.

The CLI way of doing things is tricky, firstly because you have to remember all the commands and secondly because you have to spell everything absolutely correctly, put everything in the right order and use special characters like spaces, colons and backslashes in all the right places. This is known as 'syntax' – get your syntax wrong and the CLI won't understand you.

Because the CLI is difficult, the Workbench screen was developed as an alternative. This is what's known as a 'GUI' (Graphical User Interface) or a 'WIMP system' (Windows, Icons, Mouse and Pull-down menus) and the idea is that it's much more 'user-friendly' and simple, because everything is shown to you on the screen as little pictures. This makes the depths of the computer seem much less mysterious and off-putting.

We won't go much further into Workbench and the Shell right now. It's just worth pointing out, though, that they are both there to help you deal with disks and what's on them: the main functions include things like formatting and copying disks, copying files and programs from one disk to another, and deleting old, unwanted files. That sort of thing.

How pictures on the screen work



THE AMIGA'S SCREEN display is based around what's called a 'bitmap', which is simple enough once you know how it works.

The picture on the screen is made up of a grid of little squares, each of which can vary in colour: it's exactly like if you took a piece of graph paper and coloured in each little square with a felt-tip pen. Each little square is known as a 'pixel', which is short for 'picture element'. Try painting in *Deluxe Paint* with the smallest brush and the 'magnify' window on and you'll see that you can change the colour of each pixel individually. Let's see how the Amiga stores the colours.

Imagine a simple case where each pixel could be black or white. Each pixel could be represented by a single bit, a binary 1 or 0: 1 for black, 0 for white, say. The Amiga holds the screen in its memory as a list of what colour each pixel is,. starting from the top-left of the screen and working along each row until it has to start again one line down. This is what the bitmap is: effectively, just a map (like a road map) of the bits that represent the screen colours.

The Amiga has a 'palette' of set colours and shades of colour that you can choose from, not just black and white: in the A600 the palette has 4,096 colours and in the A1200 it has 16,777,216. You can set whichever one of these colours you like to be represented by the binary 1s and 0s, so in our simple example, instead of black and white you could just as happily have blue and yellow.

If you want more colours, you need to add more bits for each pixel. To display four different colours, for instance, you'd use two bits: your colours could then be represented by 0,0 or 1,0 or 0,1 or 1,1.

To represent this in memory, the Amiga imagines that a second bitmap is placed behind the first one, almost as if you've got two pieces of graph paper behind your screen. To get the colour of a pixel, the Amiga must read 1s and 0s from the relevant position on both bitmaps. In actual fact, when there's more than one, the bitmaps are called 'bitplanes' and the whole collection of planes is called the bitmap.

Add a third bitplane and you can have 8 colours; with four, you can have 16 colours; and with five bitplanes, 32 colours are possible for each pixel. The A600 stops there, but the A1200 can also have 64 colours (six bitplanes), 128 colours (seven) or a maximum of 256 colours (eight bitplanes).

But it doesn't stop there. The A600 has two extra colour 'modes' built in. EHB (Extra Half Brite) uses a clever programming trick to let you use 64 colours in total, though only 32 of them are real and the other 32 are the same colour, but exactly half as bright.

HAM (hold and modify) works on the basis that each colour on a TV is made up of red, green and blue: instead of defining a separate colour for each pixel, it allows some colours to be like the last one but with the amount of red, green or blue in the colour changed. In this way it lets you use all 4,096 of the A600's colours to paint with.

Finally, the A1200 has a new version of HAM called Super HAM. It works in exactly the same way, but because the A1200 allows eight bits per pixel and has many more colours in its palette, it can modify

The complicated bit at the back of the telly with all the wires is the business end. Here are the electron 'guns', which push out beams of red, green and blue electrons in separate streams. From these three colours of light, any other colour can be made.

The beams are bent to the appropriate point on the screen by a circle of electro-magnets, also towards the back end of the TV tube. The beams then pass through a wire mesh with lots of little holes in, to make the picture more accurate, before finally hitting the phosphor coating on the back of the screen to make a single little dot on the screen. Each dot is called a pixel.

The monitor draws a whole screen, dot by dot, every 1/50th of a second. It starts off at the top left and draws a line of dots along the screen to the right, which is known as a 'scan line'. This is quite an important term, because the Amiga's custom chips can change the colour of the background or even change the whole palette at the end of each scan line.

Another useful term is 'frequency'. Because the monitor draws a new picture every 1/50th of a second, it is said to have a frequency of 50Hz (Hertz meaning simply 'cycles per second'). Some screen modes on the Amiga 1200 do use a different frequency, and therefore need a 'multi-scan' monitor – one that can work at different frequencies – in order for you to use them.

Lastly, if you know how a monitor works it helps explain why RGB colour video signals are the best quality. It's simply because messages to the Red, Green and Blue guns are carried separately. In a Composite signal they are all mixed up and then have to be de-scrambled by the monitor, which results in some loss of quality.

the red, green and blue more. The result is that Super HAM allows you to use 262,000 colours on the screen.

Apart from the number of colours used, the other thing you can decide about your screen display is the 'resolution'. In a normal low-resolution Amiga screen, there are 320 pixels across the screen and 256 down (that's 81,920, fact freaks!). If you make them smaller, you can fit more of them on the screen. The advantage of this is that the smaller the pixels are (the higher the resolution), the less noticeable it becomes that the picture is made up of little blocks.

The A600 also has medium resolution, in which the width of the pixels is halved, to give you 640 pixels across by 256 down, while high resolution halves the height too, giving 640 by 512. Both these have a maximum of 16 colours rather than 32.

There's also Interlace, which gives 320 by 512 and can be used with anything up to 4,096 colours. This is a bit clever, because it works exactly the same way as a TV picture, making the Amiga ideal for video use.

The A1200 has all sorts of extra resolutions, the highest of which are limited to only four colours, but there's too many of them to list here!

Kickstart chip contains a number of small programs that it squirts to the CPU when you switch your Amiga on. These programs first wake up all the input and output devices, then run a check on all the chips and bits and bobs to make sure that everything's working.

If all is well, it displays an animation on the screen asking you to insert a disk in the disk drive. If there's anything wrong with the system, however, the Kickstart programs will display a single colour on the screen: which colour it shows will help an engineer analyse what's wrong with the machine.

Kickstart then runs a program that tells the CPU to check if a disk is put in the disk drive. It will sit there running this program until you do put a disk in. The program then tells the CPU to load data from a particular place on the disk and check it.

> "Important chips in the Amiga are: Paula, Agnus and Denise in the A600 – though in the A1200, Agnus is replaced by Lisa and Denise by Alice"

This particular place is called the 'boot block' (how data is organised on a disk is described in the panel about disks and disk drives). If the data in the boot block is not right, the CPU will ignore it, because this obviously isn't a boot disk (one that can load a program into the Amiga). If it is right, the data in this block will run a program that loads data from the disk into RAM and then runs the program. Simple enough!

The programs contained on the Kickstart chip are loosely described as AmigaDOS (the Amiga Disk Operating System) because they prepare the Amiga to load a program from the disk drive.

Recent releases of Kickstart (version 2.05 in the A600 and version 3 in the A1200) come on a larger chip which can store more data – 512K as opposed to 256K. Thanks to this extra storage space, the Kickstart chip is also able to store some CLI commands. This has two major advantages: compared with the CLI commands on the Workbench disk, these load much quicker, and you don't have to have the Workbench disk in the drive to use them. A full explanation of Workbench, the Shell and CLI commands is featured in yet another separate panel.

Right, back one step. We were talking about input and output. Obviously, the CPU can read from and write to input and output devices in just the same way it can read from and write to RAM, but there is one important difference.

Each device talks its own language, and the CPU doesn't have the capacity to translate. So all the negotiations are handled for it by a control chip, which happens to have a name. This chip was called Gary in the A500, but in the A600 and A1200 goes by the name of Gayle.

Gayle handles reading data from and writing it to all input and output devices, including the external disk drive, the serial and parallel ports and the PCMCIA and IDE connectors. All these are explained in a separate panel.

That Gayle does this job is round about all you need to know about her, but there are some much more important chips in the Amiga that also have names. These are Paula, Agnus and Denise in the A600 – though in the A1200, Agnus is replaced by Lisa and Denise is replaced by Alice.

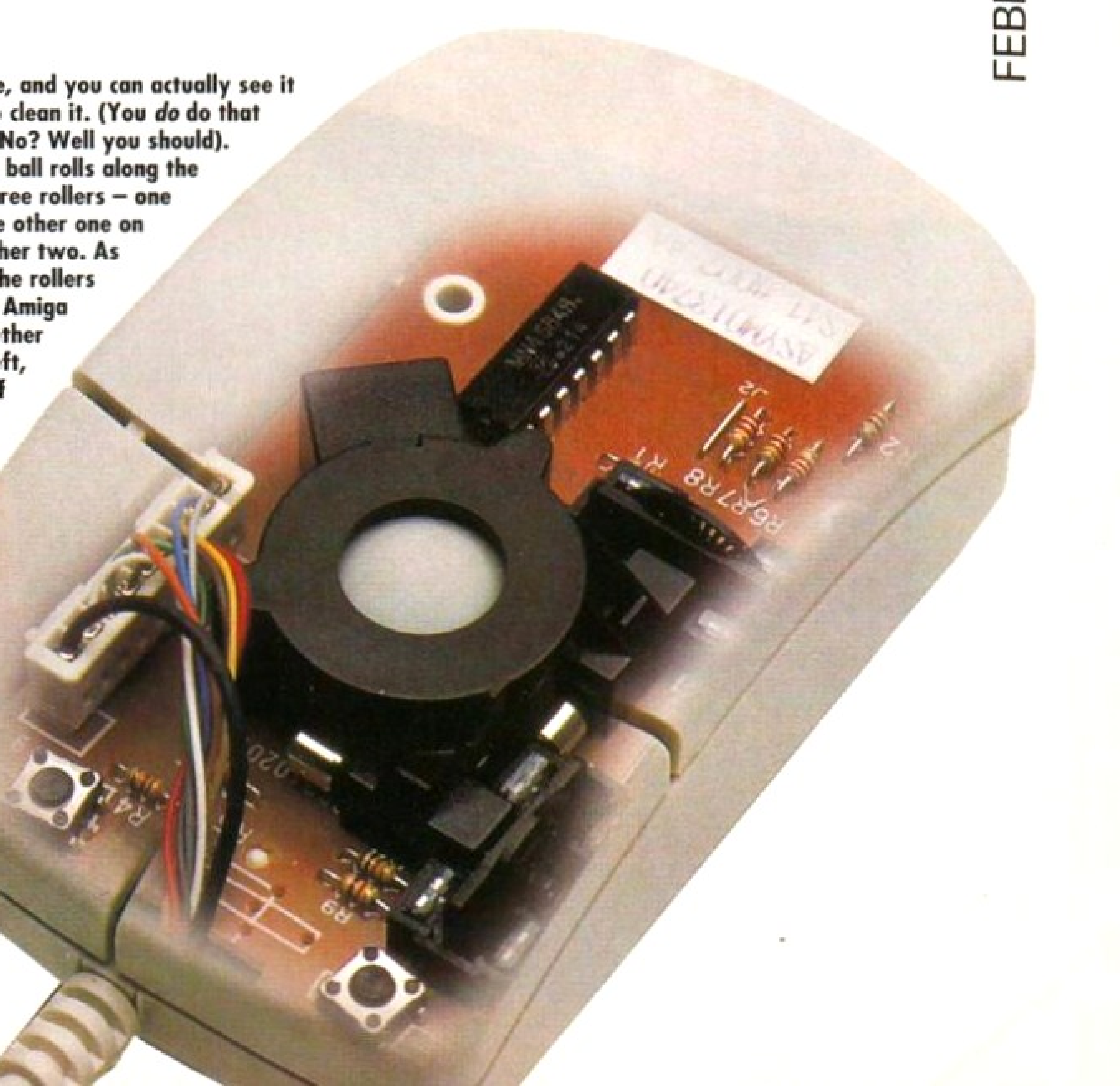
These three chips make up the custom chip set. The A600 features new versions of Agnus and Denise and so its chip set is called the Enhanced Chip Set or ECS, while the A1200 features an even newer set which is known by its Commodore version number as the AA chip set, or alternatively by its Commodore official title as the AGA (Advanced Graphics Array) chip set.

These custom chips are what make the Amiga so special. The important thing about them is that each one has its own set of instructions, just like the CPU, so they can also be programmed to do things. To make this happen, the custom chips also have to be able

Continued overleaf

The way a mouse works is pretty simple, and you can actually see it all when you take the ball out to clean it. (You *do* do that occasionally, don't you? No? Well you should).

Anyway, the basic idea is that a big ball rolls along the desktop. As it rolls, it presses against three rollers – one for up/down, one for left/right and the other one on a spring to push the ball against the other two. As the ball rolls, the rollers turn: and as the rollers turn, they click little microswitches. The Amiga can pick up these clicks and knows whether the mouse is being moved to the left, right, up or down, and by the number of clicks it knows how far the mouse has travelled. Simple, eh?



to access RAM directly, without consulting the CPU. This feature of the Amiga's architecture is called Direct Memory Access (DMA). It's to make DMA possible that the Amiga features two different kinds of RAM: Chip RAM and Fast RAM. The chips for each kind of RAM are exactly the same, however, the difference between the two being in where the addresses of a particular bit of RAM are.

The first 1Mb on an Amiga 600 is Chip RAM, and that's as much as it can have. Anything after that is Fast RAM. On the A1200, the first 2Mb of memory are Chip RAM and the rest is Fast.

Fast RAM gets its name because it's quicker for the CPU to access it: it doesn't need to see if the custom chips are getting in its way. Chip RAM is so called because the custom chips are allowed direct access to it. The advantage of having more Chip RAM is that it allows you to use more animation and more sampled sounds, because both these functions are handled by the custom chips.

> " A sprite is simply any small object that moves around the screen over a background, like a spaceship in a shoot-em-up. Sprites can easily be drawn on the screen and moved around by the program "

Paula is the sound chip. It can act as a synthesiser, creating the electrical pulses that make up sounds. It also includes an important electrical circuit called the D-to-A (Digital-to-Analogue) convertor. This enables it to convert digital data into analogue sound – the pulses that make a loudspeaker vibrate and create noises as air waves. This gives the Amiga the ability to use 'sampled' sounds.

What is a sampled sound? Well, noises are waves in the air, and are created electrically by a current in a wire which pulses, pushing a cone of paper in a loudspeaker in and out by means of an electro-magnet. The electric signal that drives the speaker can vary in voltage, up and down, all over the place, so it's known as an 'analogue signal' – the amount of electricity is directly analogous to the amount it pushes the speaker cone. Sampling is exactly like the digital sound used by a CD player. A sampler checks the level of the electrical signal many times a second, and at each point converts it into binary data which can be stored by the computer.

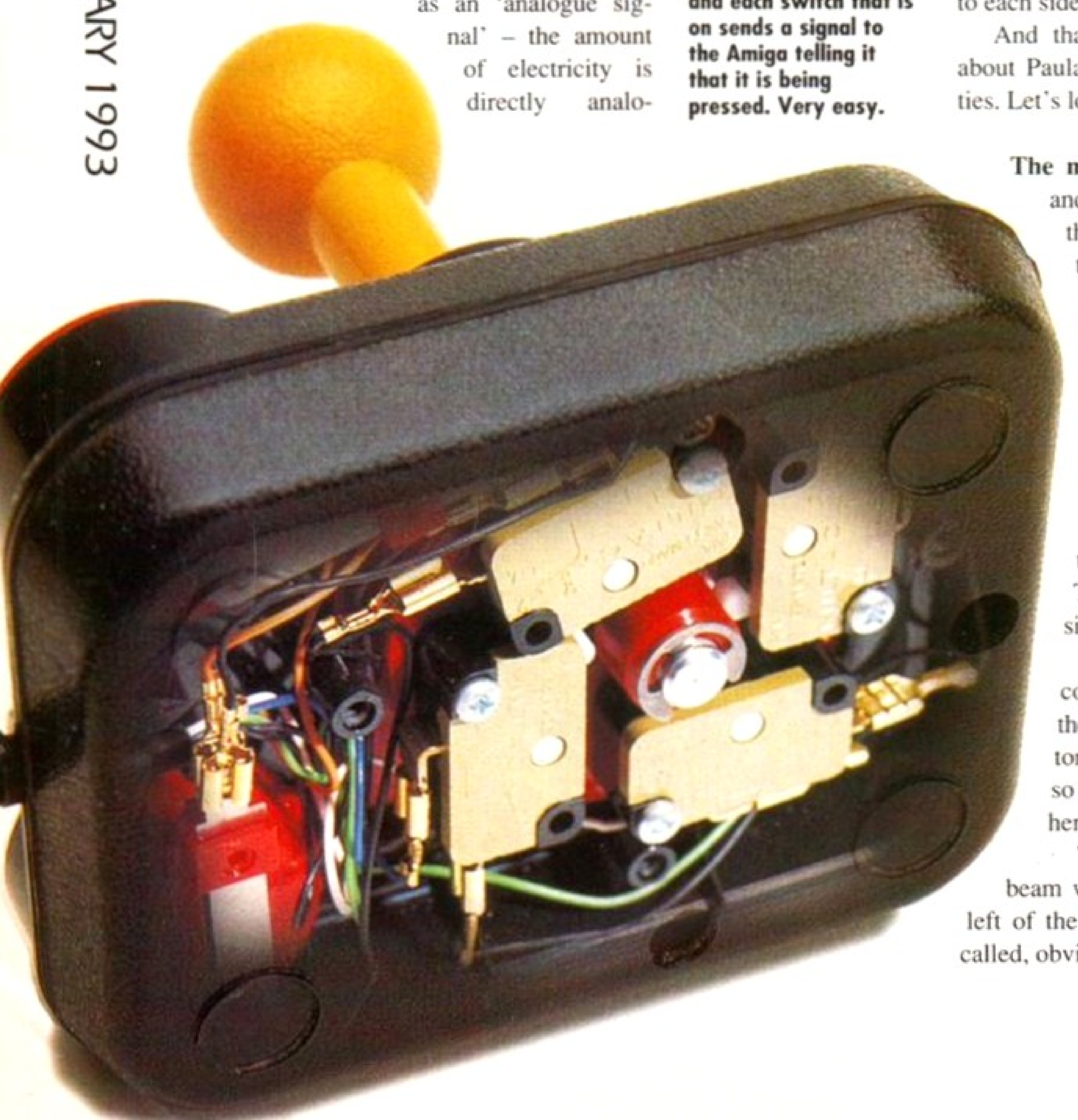
The Paula soundchip can convert this binary data back into an analogue signal using the D-to-A converter, then send that signal to the stereo outputs on the back of the Amiga and hence to loudspeakers.

You can buy your own sound sampler – a good one can now be had for as little as £25 – and experiment with sampled sounds yourself. The sampler is a piece of hardware that connects to the parallel port on the back of the Amiga, and it includes an A-to-D (analogue-to-digital) convertor that translates the signals from whatever sound input you attach to it (microphone, hi-fi, video, whatever) into digital data. Sound samplers are controlled by software that comes with the hardware, and using the software you can also 'edit' your sounds – chop out bits you don't need.

Using another kind of software you can then write songs using your samples. This type of program is usually known as a sequencer because you use it to create sequences of notes. Paula has the ability to play back sounds at different 'pitches' – high (treble) or low (bass) notes – varying across a full eight octaves of sound.

Paula also allows you to use four 'channels' of sound, which means that Amiga can play four different sounds at the same time, so you can use four different instruments (sounds) in the tune you create. The Amiga has stereo sound, so two of these channels go to each side of the stereo.

And that's really all you need to know about Paula and the Amiga's sound capabilities. Let's look at the other custom chips.



The joystick is the very simplest of devices. All it is is a rod (the stick bit) with a pivot of sorts at the bottom. As you push and pull the 'stick in different directions, the rod presses one of eight microswitches – one for up, down, left, right and each of the diagonals – and each switch that is on sends a signal to the Amiga telling it that it is being pressed. Very easy.

The most important thing about Alice and Lisa is that they are the heart of the Amiga's graphics. Built in to these chips are the Amiga's display resolutions (which are explained in a separate panel).

Agnus includes two 'co-processors', which are like mini-CPUs with their own instruction set – Agnus has 256 logic instructions. The co-processors go by the unlikely names of the Blitter (short for Block Image Transferrer) and the Copper (short simply for co-processor).

The Copper allows split-second control over the scanning beam on the monitor. We've explained monitor displays in full in a separate panel, so take a look at that now. But briefly, here's an idea of how it works.

The TV picture is built up by a beam which scans across a line from the left of the screen to the right – each line is called, obviously enough, a scan line. In a low-resolution display, to take the simplest example, the TV needs 256 of these scan lines to create a complete picture, and it's creating one complete picture every 1/25th of a second. This means a new scan line is started every 1/6400th of a second, which shows you how quickly the Copper is working. At the start of any scan line, the Copper can change what image is being drawn on the screen. This means the Amiga can do what's known as a 'split-screen display', the most obvious example being if you load a program like *Deluxe Paint* from the Workbench – using the left mouse button on the title bar, you can drag the *Deluxe Paint* screen up and down, revealing the Workbench screen behind.

The other thing the Copper can do is switch one of the screen colours on each scan line. This effect is programmed using a bit of code known as a 'Copper list' and it changes the background colour to a new one on each line – it's what gives the rainbow-effect skies and backgrounds in arcade games such as *Zool*.

The Blitter is prepares images to be drawn on screen. It can take three graphic inputs and combine them to create one output, which is what makes possible the concept of 'masking'. In a game, for example, where a sprite is drawn over a background, the whole thing's organised in a very specific way: the background is drawn first, then a cut-out 'mask' (like a shadow of the sprite) is put over it, then the sprite can be drawn where the mask is.

The other chip, Denise, is the one that handles the actual display of images, converting the bitmap information from memory into an actual screen display. Denise also looks after the collision detection in games and handles hardware sprites. So what's a hardware sprite?

Well, a sprite is simply any small object that moves around the screen over a background, like a spaceship in a shoot-em-up. Sprites can quite easily be drawn on the screen and moved around the screen by the program, but a programmer can also define a number of hardware sprites. All he has to do with these is tell the Amiga it's a sprite, and Denise will do the rest of the work of drawing them and moving them around the screen. The mouse pointer on the Workbench screen is a good example of a hardware sprite.

The advantage of hardware sprites is that they are quicker, but the disadvantage is that there is a limit to how many you can have on the screen and how big they can be. With software sprites, there is no such limitation.

There's one last thing worth a mention on the custom chip front, and that's again to do with architecture. The new AA chip set in the 1200 is full 32-bit, which improves the speed. As we said earlier when talking about the CPU, the 14MHz clock speed and the 32-bit data bus should make the 1200 about four times as fast as an A500, but the 32-bit chip set adds a little extra oomph – Commodore's tests reckon it to be about five times as fast.

So that's how the custom chips fit in. Because they have their own programming instructions, they give the Amiga many of its advantages over other computer systems. Clever stuff.

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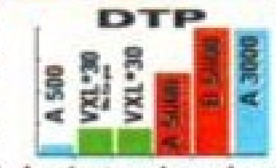
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THE AMIGA CD CONSOLE



Commodore are committed to cheap, accessible, 'entry-level' Amigas and also to the idea of CD as the main storage format for entertainment software. They also believe that CD gives them the opportunity to oust the Japanese console giants. Put them together, and a CD-driven console seems a pretty viable option.

In favour of the Amiga CDC (CD console) is the fact that all CDTV software was developed to make use of a limited control system from the CDTV's infra-red controller, so the possibility of a keyboardless system, controlled perhaps by console-style joypads or infra-red versions thereof, is proven and workable.

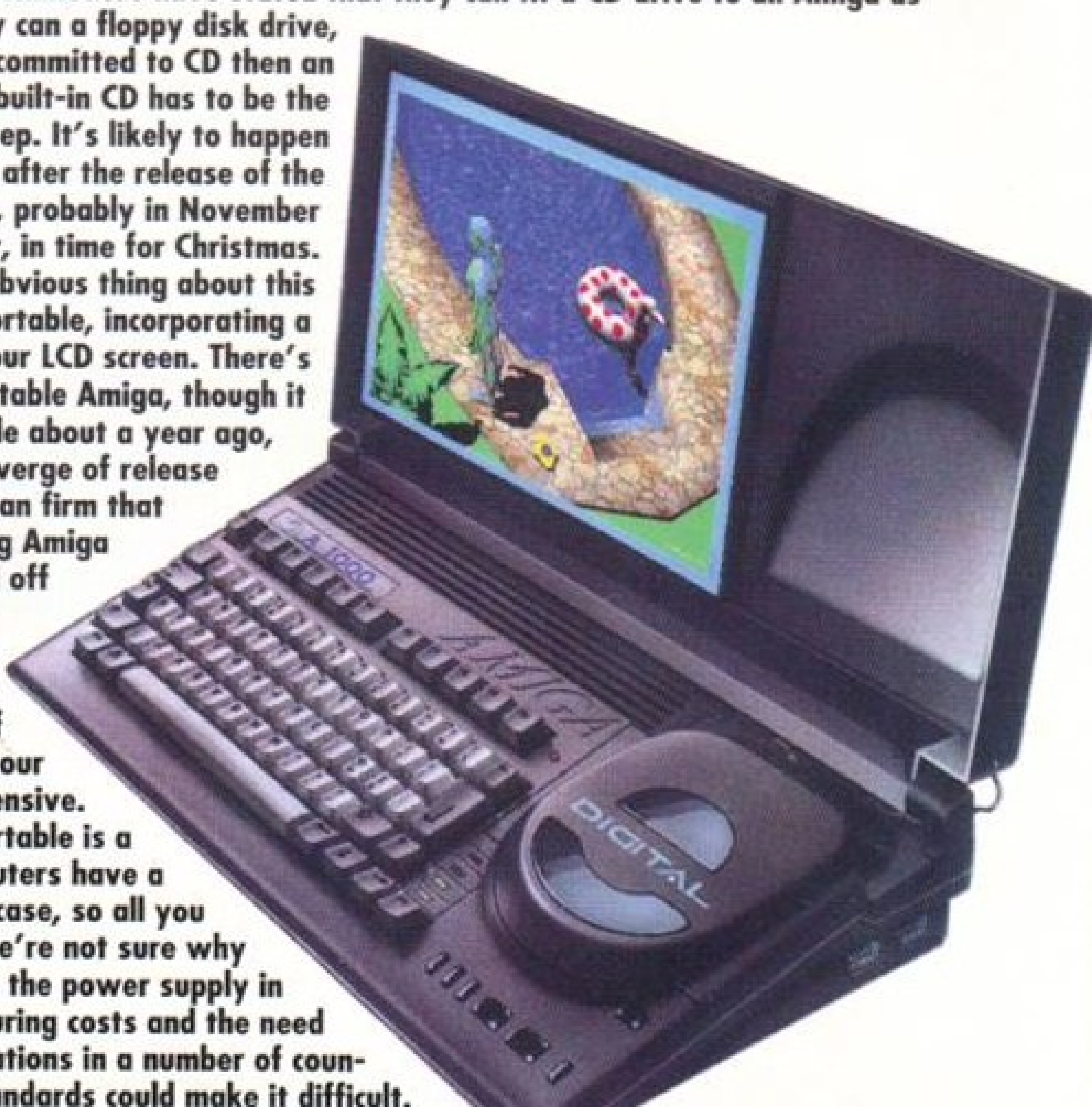
The cost reduction of a keyboardless Amiga means this device could come out at £120-£150.

Expandability would definitely be the key, with all the standard Amiga interfaces on the back, including the capacity to add a floppy disk drive and a keyboard (around £40 and £50 respectively). A PCMCIA slot would also be vital. This fits with Commodore's long-term vision of the Amiga as a 'modular system'.

Like all new Amigas, the CDC would need to be based on the new A1200's specification, with 32-bit architecture, 68020 processor, the AA chip set and 2Mb of chip RAM as standard.

On the down side, though, it seems unlikely that Commodore will take this route. As the Amiga has developed, their speciality has very much become the world's best-selling home computer, with all its inherent creativity and productivity advantages. Plus Commodore UK boss Kelly Sumner has admitted in the past that his biggest mistake was the C64 console, a personal project of his which flopped totally. Still, it makes sense in so many ways that anything is possible...

THE A1000 PORTABLE



This is a bit of a dream machine, but it incorporates a number of ideas that are significant at the moment. Essentially this is an A1200 adapted for the arrival of the CD drive. Commodore have stated that they can fit a CD drive to an Amiga as cheaply as they can a floppy disk drive, so if they are committed to CD then an A1200 with built-in CD has to be the next logical step. It's likely to happen about a year after the release of the original 1200, probably in November this year, in time for Christmas.

The other obvious thing about this Amiga is it's portable, incorporating a fold-down colour LCD screen. There's never been a portable Amiga, though it seemed possible about a year ago, there was one the verge of release – but an American firm that proposed producing Amiga portables was warned off by Commodore in the US.

There are problems though. Power consumption in a portable is the key and the Amiga gets through a lot of power. Price is also a drawback – colour LCD screens are expensive.

One important aspect of the portable is a built-in power supply. Many computers have a power transformer built in to the case, so all you need to plug them in is a lead. We're not sure why Commodore haven't tried to include the power supply in the A1200, but it may be manufacturing costs and the need to meet consumer-protection regulations in a number of countries with widely differing standards could make it difficult.

This a cross between a manifesto and an almanac. **Amiga Format's** staff, the world's foremost Amiga commentators, set the agenda for what should – must – happen in 1993...

Visions of the

The Amiga Format Manifesto

1992 was undoubtedly Commodore's most impressive year for the Amiga. They introduced lots of new ideas that have a major place in the future, such as IDE, PCMCIA and the A1200's new standard. But they've also got a lot of plans for 1993, which is bound to be another big year of change.

Last issue, we asked 40 of the most important companies in the Amiga world what they thought about certain key issues. In some ways, many of the answers were disappointing: too many of them seemed to have too little idea of where Commodore are planning to take the Amiga.

So partly for their benefit and partly for yours, we thought it would be useful to identify the key Amiga issues and to state, here and now, what *Amiga Format* believes must happen. We'd also like to point out a few things to Commodore: you've had a great year, but there's more to be done yet, boys!

• CD MUST BECOME THE PREMIER STORAGE MEDIUM

Commodore are utterly committed to this and are prepared to 'lead the market' in the right direction. So are we. Only a few key UK game publishers seem to be aware of this to date.

Software on CD is proof against casual piracy and CDs are much cheaper to make than the console-style ROM cartridges. They also allow potential for much more impressive software, with massive storage capacity equivalent to over 600 floppy disks.

CD could also break the stranglehold of approval and licence fees with which Sega and Nintendo have been able to control the games software market. Something big is definitely going to happen and if you're not aware of CD, you're doomed.

• GAMES MUST COST £20 OR LESS

All the leading UK software houses who we've spoken to are already committed to this concept. And it's going to be CD as a medium that will make it possible, this is because of the massively lower production costs and much shorter 'lead times' for manufacture.

The games publishers have enjoyed the boom in popularity of games on the piracy-proof console cartridges, but they have now come to realise that consumers dislike the high retail prices of cartridges, which is caused by the high cost of manufacture and the 'licence' system by which money goes to the console manufacturers.

The Amiga CD, as an 'open system' for which anyone can develop games, can remove these disadvantages and make the £20 brand-new game a standard.

• COMMODORE MUST ENSURE AMIGA CD IS AN OPEN SYSTEM

All CDTV discs currently have to be licensed and approved and use a variety of 'key code' in the boot. Not on. Commodore must resist the temptation to put any restriction on who can develop for the Amiga.

• PCMCIA IS FOR HARDWARE, NOT SOFTWARE

Many people seem to believe that the 'credit card' slot has been included so that cartridge-based software is an option. It's not. That would simply repeat all the problems that CD can sort out.

PCMCIA is an ideal way of adding extra hardware: a slim card can fit a 4Mb RAM expansion, backed by a battery if need be so that you can carry it around and retain the data. But RAM is just a start: fax/modems and even hard drives will soon come on cards.

PCMCIA cards are a cheap, compact and extremely convenient way of adding extra widgetry to the Amiga and we're right behind the idea.



THE A5000

Or, alternatively, the B4000. Whether or not it's true, there is a rumour that the top man at Commodore US was dissatisfied with the A4000, believing, impressive though it was, it didn't go far enough. Look at the price of the A1200 and compare it with the A4000 and you might be forced to agree.

Commodore in the US make no secret that they have a 'Triple A' chip set in development. We would envisage an A5000 based around this chip set would be a logical development in the middle of next year.

This chip set has only one place left to go as far as graphics are concerned, and that's a true 24-bit display – selecting from 16 million colours on the screen. This would give 256 shades of any colour, which is believed by experts to be sufficient to give a perfect representation of any picture.

Add in 16-bit 'CD quality' sound from a new sound chip and you have the perfect machine: there is nowhere else to go as regards graphics or sound. Other specifications would be similar to the A4000, with the 68040 chip on a removable 'master board' to allow immediate upgrade to Motorola's next generation of faster chips.

Inevitably, while IDE is the perfect solution for miniature hard drives, a return to SCSI2 is necessary in the A5000 as well, for the extra speed. Lastly, there must be an option for an internal CD drive. With the A2200 taking on the cheap PC market in homes and small businesses, the 24-bit A5000 would be the ideal graphics workstation for film, TV, video, DTP and the burgeoning multimedia presentation market. The A3000 and the A4000 could then be scrapped.



THE A2400

Commodore are adamant that a project they did have under way that went by the name A2200 has been abandoned, and that there is no need for a new mid-range Amiga - gradual price reductions in the A3000 and A4000 over the next year will, they insist, fill the gap. But is it that simple?

There's now an enormous gulf in price between the A1200 and the higher machines in the range, even if you consider that there is nothing to stop Commodore from fitting the AA chip set to the A3000. The specification of the A1200 at its £399 price make the A4000, which has limited advantages over the lower-end machine, seem ludicrously overpriced at £2,100.

As soon as you consider the mid-price computer market, the IBM PC-compatibles have to come into the equation. You can now get a fast 33MHz PC of the very latest type, with 256-colour VGA graphics, a hard drive built in and a monitor, all for £1,000 or so. Good, but surely an Amiga could compete?

Our 2400 would be aimed at doing just that. Start from the base of an A1200, put it in a case with room for a couple of expansion slots and give it a separate keyboard, at a cost of maybe £100 extra. Give it a faster 68030 processor with a co-processor (maybe £50 extra - it's surprisingly cheap), the high-density disk drive from the A4000 (another £50 above the basic unit) and fit it with a 40 Mb internal hard drive at a cost of around £100. Total cost £799 for a heck of a lot of computer.

There are other elements it may be possible to incorporate, such as the DSP (Digital Signal Processor) chip for improved sound, which Commodore considered fitting in the A1200 but were prevented from including because they wanted to keep the cost at £399. But this machine would offer an impressive competitor for PC-compatibles as well as offering an upgrade path for Amiga owners who want to move to a more business-like machine.

future

• MORE PEOPLE MUST GET HARD DRIVES

Commodore have done their best to encourage you, the owner, to get a hard drive by introducing IDE into the low-level Amigas. This makes it far easier, much cheaper and immensely more convenient to fit a hard drive.

A hard drive makes an enormous difference to your machine. Everything you do, with the exception of playing games and, in many cases, that too, becomes quicker and easier. Workbench and all your favourite programs load instantly and are much more usable. Don't hesitate – get a hard drive.

There is one problem Commodore must sort out, and that's warranties. IDE drives are easy to buy and fit yourself, but that's no use if your on-site repair warranty goes down the pan. One solution might be to firm up the system of official Commodore dealers and oblige these dealers to fit drives at minimal cost, reseal the warranty sticker, and supply drives to Wang, the company that handles warranty repairs, so that on-site maintenance is still possible.

• GAMES MUST SUPPORT EXPANSION HARDWARE

Two of the most common complaints about a game are 'It's great, but it comes on two disks and ignores my second disk drive' and 'I can't install it on my hard drive'. Irritating, we agree.

However, it will cease to be a problem when games are finally released on CD. In the long term, therefore, we have to say these two problems will cease to be an issue.

One that will come increasingly to the fore, however, is that software will need to support the whole range of Motorola 68xxx processors. There's no longer any excuse for any kind of program to fail when run with an advanced processor or a co-processor.

• ON WORKBENCH BEING INSTALLED ON ROM CHIP

There has been a movement in favour of the contents of the Workbench disk being included on a larger Kickstart ROM. Not a good idea: it prevents the user customising it and upgrading easily to newer versions. Hard disks make Workbench perfectly useable.

• COMMODORE MUST INVESTIGATE INTERNAL POWER SUPPLIES

Most home-computer systems have an in-built power supply, so you can plug them straight in with just a lead. The Amiga still has that hideous power 'brick'. Why? The TV modulator has been incorporated in the machine, so why not the power supply?

• COMMODORE SHOULD RELEASE AN A2400

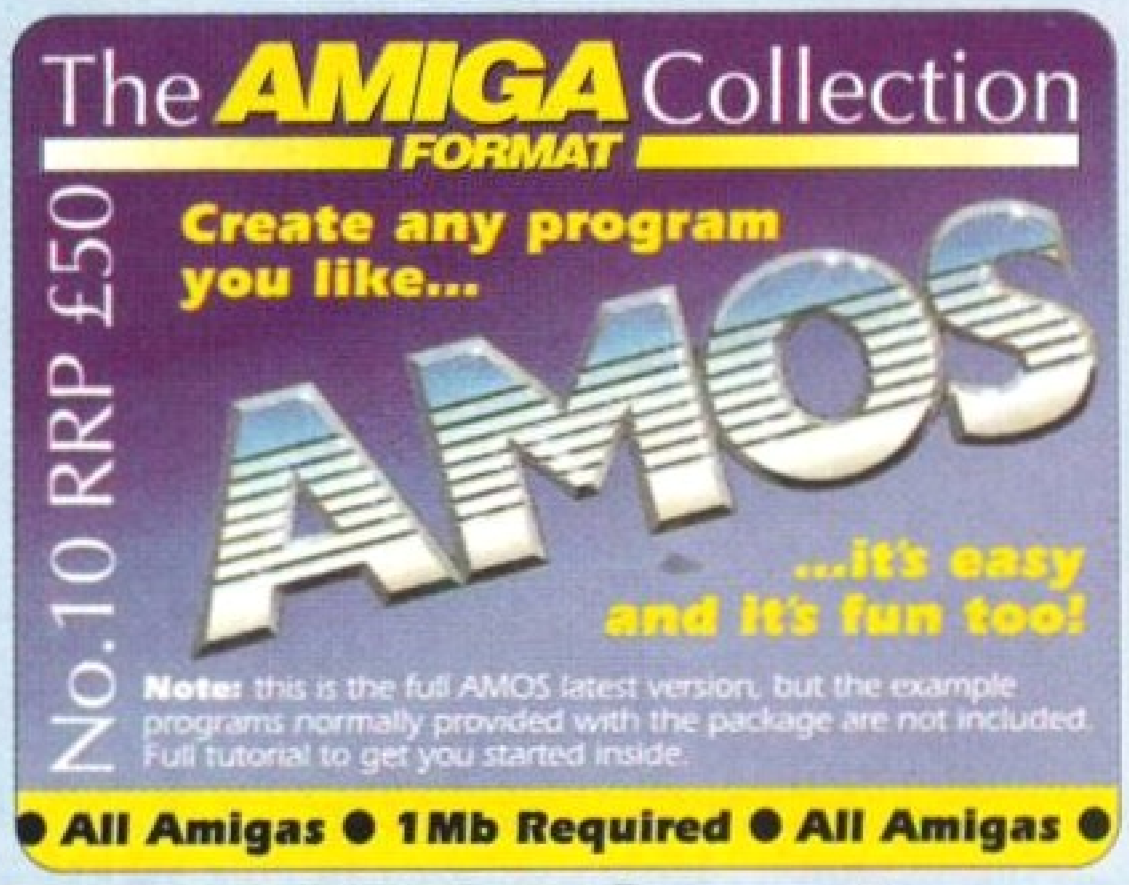
There's a clear demand for a next step up Amiga from the 1200, with a similar specification but potential for 'in the case' expansion. A specification for this machine is discussed in more detail above. We don't see why Commodore don't plan to produce one.

• THE A4000 SHOULD BE REPLACED BY A NEW MACHINE WITH THE 'TRIPLE A' CHIP SET.

Again, this is discussed above. The release of the A1200 has made the A4000 seem ludicrously expensive, but a full 24-bit graphics workstation with the new chip set in would almost certainly restore it to its position as the Rolls Royce of the Amiga world.

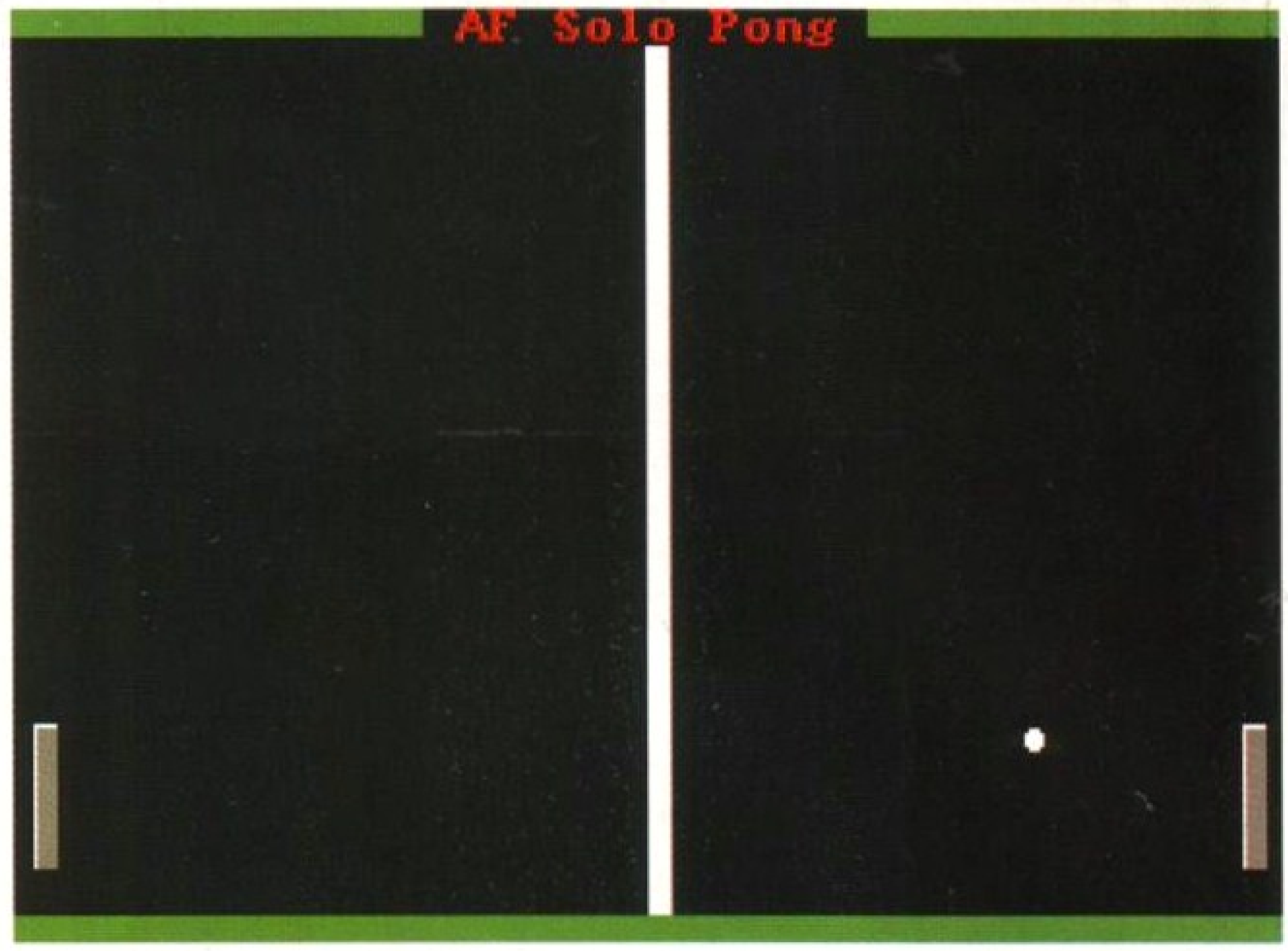
• SCSI MUST BE RECONSIDERED

The IDE drive in the lower-end home Amigas is an absolutely ideal solution, but the workstation market has different needs. SCSI not only offers faster hard drives, but also allows access to SCSI-connected graphics peripherals such as professional scanners.



Get AMOS for cheap

The tutorial on this page is designed to help you get the most from the programming language *AMOS*. If you don't have *AMOS* but would like to have a go at programming your Amiga, you're in luck. Because *Amiga Format* featured the complete *AMOS* program on our January 1993 Coverdisk. Now you should have bought that issue, but if you didn't, we'll give you one more chance to get your hands on the truly spectacular *AMOS* language. Turn now to Page 186 and buy it from back issues.



It's completely unoriginal and it's not even very good. But the important thing is, it's going to be all your own work. One interesting thing is that we're starting right at the first roots of computer gaming, here: Pong was the very first arcade game ever, invented by Nolan Bushnell in the early Seventies.

Getting the most from your AMOS Coverdisk

Last month we started off our AMOS series by giving you the full program on the Coverdisk. Now we continue with a tutorial for your first real project: our own DIY version of a classic arcade game…

SO YOU'VE BEEN waiting for four weeks now with the *AMOS* program loaded and nothing to run on it? Feeling a little frstrated? Oh dear, well we'd better start teaching you how to use it then, hadn't we? In this second tutorial we'll be writing a game, as that is one of the things *AMOS* does best. We'll make it a simple game, and to keep it even simpler we'll make it so that the program creates its own graphics and sound so you don't have to.

The game we're going to write is *Solo Pong*, a ping-pong type game where you play both players and control the paddles with the mouse. This is one of the very earliest type of computer games known to man, and one of the simplest to write using a modern programming language like *AMOS*.

The basic idea is that the ball bounces off of the top and bottom of the screen, but if it touches the ends, that's a goal. You stop it touching the ends by batting it away with the paddles. When you finally miss it, the game is over.

STEP BY STEP

Our program listing begins in the same way as a lot of *AMOS* listings, by turning off the text cursor and the mouse pointer. These just get in the way otherwise, and as our mouse will be controlling the paddles we don't need to see the pointer or the cursor. The two commands we use to do these two things are:

```
Curs Off
Hide
```

You could just as easily say:

```
Curs Off : Hide
```

putting them on the same line, but our listing tries to be clear and simple, so we don't use the colon ':' symbol to put commands on the same line unless we have to.

The next thing we do is turn on the 'double buffer' command. Double buffering is a way of ensuring sprite movement is flicker free and smooth by doing all the sprite moves on an invisible screen before they appear on the visible one. This is all done automatically by the next command:

```
Double Buffer
```

That's all you have to do. From that point on all sprite commands are done using the double buffer system, ensuring smooth and gliding movement.

Next we have to draw the sprites and grab them into the sprite bank. *AMOS* can do this, create sprites or movable objects by grabbing them from the screen. Equally you can draw them in a sprite editor (as was detailed in the last issue) and load a sprite bank from disk, but it's much much simpler if you can draw simple sprites using *AMOS* graphics commands and grab them as sprites. We only need two sprites for this program, the bat and the ball. The bat is defined like this:

```
Paper 0
Ink 7
Bar 0,0 To 5,30
```

The first command sets the paper colour for the game, colour 0 which is in this case black. The Ink command changes the colour of any drawing operations, which in this case means when we draw the bar in a moment it is colour 7 or a light grey. The Bar command draws a filled rectangle on the screen using the format:

```
Bar x1,y1 To x2,y2
```

where x1,y1 are the co-ordinates of the top left hand corner, and x2,y2 the co-ordinates of the bottom right. So in this instance we are drawing a rectangle in grey which starts at the top left hand corner of the screen (0,0) and is 30 pixels tall and 5 wide. The next line puts a white line along the left-hand side and the top to make the bat look a bit 3D, like so:

```
Ink 2
Polyline 0,30 To 0,0 To 5,0
```

The Polyline command allows you to draw lines in the following format:

```
Polyline x,y To x,y To x,y...
```

as many times as you like. This line starts at the bottom left hand corner of the Bar we just drew and in Ink colour 2 (white) goes up to 0,0, then across to the top right hand corner at 5,0.

That listing in full...

Here is the complete listing for you to type in. Just type it in exactly as it says down here, being careful to put in any spaces and punctuation marks correctly. Once you've typed the program in and saved it to disk, you can run it.

```
' ** Amiga Format Solo Pong **
' **
Curs Off
Hide
Double Buffer
Paper 0
Ink 7
Bar 0,0 To 5,30
Ink 2
Polyline 0,30 To 0,0 To 5,0
Get Sprite 1,0,0 To 6,31
Cls 0
Ink 2
Circle 5,5,2
Paint 5,5
Get Sprite 2,0,0 To 10,10
Limit Mouse X Hard(0,0),Y Hard(0,5) To
X Hard(0,0),Y Hard(0,165)
Cls 0
Pen 4
Locate ,7
Centre "Amiga Format"
Locate ,9
Centre "Presents"
Locate ,11
Centre "the very excellent"
Pen 3
Locate ,13
Centre "A F   S O L O   P O N G"
Locate ,24
Pen 2
Centre "<press a key>"
Wave 0 To 15
NOISE
Wait Key
'
RESTART:
Cls 0
Ink 11
Bar 0,0 To 320,5
Bar 0,194 To 320,200
Ink 2
Bar 160,0 To 165,193
Pen 4
Locate 0,0
Centre " AF Solo Pong "
X=150 : Y=100
DX=Rnd(4)+2 : DY=Rnd(2)+1
R1=Rnd(10) : If R1>5 Then DX=-DX
R2=Rnd(10) : If R2>5 Then DY=-DY
'
MAIN:
Add X,DX : Add Y,DY : If Y<=5 or
Y>=190 Then DY=-DY
Z1=Bob Col(1) : Z2=Bob Col(2) : If Bob
Col(4) Then DX=-DX
If X>=320 Then LOSE : Goto RESTART
If X<=-20 Then LOSE : Goto RESTART
If Z1<>0 Then DX=-DX : DX=Rnd(5)+3
If Z2<>0 Then DX=Rnd(5)+3 : DX=-DX
Y1=Y Screen(Y Mouse)
Bob 1,5,Y1,1
Bob 2,310,Y1,1
Bob 3,X,Y,2 : Wait 1
Goto MAIN
'
Procedure LOSE
   Boom
   Pen 3
   Centre "  Game Over, Man  "
   Locate ,24
   Centre " <press a key> "
   Wait Key
End Proc
'
Procedure NOISE
   For L=79 To 0 Step -1
      Play 96-(20+(L/2)),0
      Wait 1
   Next L
End Proc
```

Finally we grab the sprite image with the command:

```
Get Sprite 1,0,0 To 6,31
```

This is similar to drawing a bar, but in this case we over shoot the image by one pixel to make sure it's enclosed by the command, so rather than 0,0 to 5,30, we go from 0,0 to 6,31. The first number (in this case 1) tells us which image in the sprite bank that the graphic we just grabbed will be stored.

The image for the ball is created in very much the same way:

```
Cls 0
Ink 2
Circle 5,5,2
Paint 5,5
```

First we clear the screen with Cls 0, clear the screen will colour 0, then we select Ink 2 (white) and draw a circle using the circle command. The command follows the form:

```
Circle x,y,r
```

Where x,y is the centre of the circle to be drawn (in this case set to co-ordinates 5,5) and r is the radius, (in this case 2). The circle is hollow when we draw it, so to make it more interesting we fill it with colour using the Paint command. We centre the paint command's attention to the centre of the circle and voila. One filled circle. Then we grab it with the command:

```
Get Sprite 2,0,0 To 10,10
```

This grabs the image of the circle into the sprite bank as image 2.

The next line is a little bit incomprehensible, and for the moment you'll have to take this one on trust. We are limiting the mouse movements to ensure it doesn't stray too far up or down. The fine detail on this command can wait for another issue, but for the moment just bang this in:

```
Limit Mouse X Hard(0,0),Y Hard(0,5) To
X Hard(0,0),Y Hard(0,165)
```

Now we're back on familiar territory. The title screen is made by clearing the screen and printing up some words. The Locate command positions the by now invisible cursor at a screen location ready for printing text on the screen. It's not measured in pixels like line drawing or other graphics. It's measured in text characters. So the visible screen in this game (it's only 200 lines tall for our NTSC based overseas readers to enjoy) is 39 wide by 24 characters tall. So the following code:

```
Cls 0
Pen 4
Locate ,7
Centre "Amiga Format"
Locate ,9
Centre "Presents"
Locate ,11
Centre "the very excellent"
Pen 3
Locate ,13
Centre "A F   S O L O   P O N G"
Locate ,24
Pen 2
Centre "<press a key>"
```

speaks for itself. The space before the comma in the Locate commands should contain a zero, but as in all AMOS commands you can leave figures out and the program simply assumes you mean nought. Pen sets text colour, in the same way Ink sets graphics colour. Pen 4 is red, Pen 2 is white, and Pen 3 is a special flashing colour, giving you that nice pulsing effect on the name of the game. The Centre command is like Print, it prints text on the screen. Check out the difference in effect between these two lines in Direct Mode:

```
Centre "Centre Amiga Format"
Print "Print Amiga Format"
```

The Centred text is in the middle of the screen and the Printed text is clinging to the left hand side of the screen.

Next we make a noise, this is created with a Procedure called NOISE. NOISE is not an AMOS keyword but a Procedure, special subroutine which is created by you and activated when we use the word NOISE. The commands contained in the Procedure NOISE is defined at the end of the program. It doesn't matter where you put the Proc definition, as long as it is in the program somewhere. Procs will not be activated unless called with their title. The Wave command is called:

```
Wave 0 To 15
NOISE
Wait Key
```

followed by the NOISE title word to run the small subprogram which actually makes the noise. The Wait Key command waits until a key is pressed on the keyboard before the program moves on. We'll be going into greater depth about sound and music in a later issue of the tutorials.



Yes, it may not look terribly exciting, but our own arcade game even has its own load screen. Before too long, we'll show you how to get something an awful lot better-looking by including Deluxe Paint pictures in your programs.

Next we need to set up the start position of the program, so that each time you fail to keep the ball in play the game will reset to this setup position. To return to the right spot in the program, we use a "label", and the name of the label in this case is RESTART. We make a word a label by adding a colon to it like so:

```
RESTART:
```

This is like a bookmark in the program, so at any point we can say:

```
Goto RESTART
```

and the program will snap back to this part of the listing. What follows the RESTART label is the commands for drawing the playing area. So we clear the screen and draw bars on the screen for the edges of the play area, the "net" in the middle (which is purely cosmetic in this case) and the words "AF Solo Pong" at the top of the screen. Notice the spaces either side of the words to leave a gap either side of the lettering when it overwrites the bar. (Try leaving them out and notice the difference.)

Next we must initialise the variables, like X,Y the position of the ball, and DX,DY the vectors telling the ball which direction to go in. We just do this like this:

```
X=150 : Y=100
DX=Rnd(4)+2 : DY=Rnd(2)+1
R1=Rnd(10) : If R1>5 Then DX=-DX
R2=Rnd(10) : If R2>5 Then DY=-DY
```

The R1 and R2 calculations are simply a random number generated to literally 'get the ball rolling'. If the random number is less than 5 then either or both of the DX and DY vectors are negative. If a vector is negative then the move is either left or up, if it's positive then it's right or down.

Now we have the main part of the program, which you can see we have labelled MAIN. This is the main program loop, which adds the vectors to the current position of the ball. If Y is equal to 5 or 190 then the ball flips direction:

```
MAIN:
Add X,DX : Add Y,DY : If Y<=5 or Y>=190
Then DY=-DY
```

This means that if the ball goes higher than 5 pixels from the top or lower than 190 pixels, it will be automatically bounced away, creating the bouncing effect. The ball sprite is not being bounced off of the bar we drew earlier, it's just a special effect which makes it look as though it is. Next we check the various objects on the screen to see if any of them have collided.

```
Z1=Bob Col(1) : Z2=Bob Col(2) : If Bob
Col(4) Then DX=-DX
```

This line goes hand in hand with the lines:

```
If Z1<>0 Then DX=-DX : DX=Rnd(5)+3
If Z2<>0 Then DX=Rnd(5)+3 : DX=-DX
```

which come along later in the listing. These test the three sprites or bobs (we'll be going into the difference between sprites and bobs later in the series) to see if they have hit any of the other objects on screen. Obviously the two bats can't hit each other, so mainly it'll be testing for the ball hitting one of the bats.

When it does hit the bat rather than the end zone, the ball will then bounce off, like it does from the top and bottom of the screen, by flipping the vector from positive to negative or vice versa. So if it's going towards the bat in a negative direction from right to left, and then it hits the bat, the direction will be changed so the ball is going in a positive direction, left to right. A little random spin is put on the ball too at this point using the Rnd(x) command. This ensures that when the ball hits the bats the angle and speed are never predictable.

```
If X>=320 Then LOSE : Goto RESTART
If X<=-20 Then LOSE : Goto RESTART
```

These lines test for the ball hitting the end zones at the left and right of the play area. If the X co-ordinate is less than -20 or more than 320 then the ball has made it out of play and the game is at an end. The LOSE Proc is activated which runs the following little program, defined at the end of the listing:

```
Boom
Pen 3
Centre "  Game Over, Man  "
Locate ,24
Centre " <press a key> "
Wait Key
```

Boom makes a slow explosion, Pen 3 sets the flashing colour and then Locate and Centre combine to print the end game words at the top and bottom of the screen. The Wait Key command waits until a key has been pressed, then returns us back to the point the LOSE Proc was called. In both cases, the program is then sent off to the RESTART label, starting the game all over again.

The last part of the game main loop deals with the actual movement of the bobs or sprites. Y1 is told to be equal to the Y position of the mouse. The reason for couching the command in so many brackets the difference between hardware co-ordinates and screen co-ordinates. Unless you convert hardware co-ordinates to screen co-ordinates, when reading the mouse for example, you're pointer will be way off the mark.

After that it's all plain sailing, with the Y1 figure being passed to the Bob command, which updates the position of the bobs every time it goes around the main program loop. Bob 1 is paddle 1, bob 2 is paddle 2 and bob 3 is the ball.

```
Bob 1,5,Y1,1
Bob 2,310,Y1,1
Bob 3,X,Y,2 : Wait 1
```

The Wait 1 on the end of the bob commands is a little pause to slow the ball down a little. Take it out and the ball moves faster than the eye can follow.

Lastly the main loop is closed by the words:

```
Goto MAIN
```

Which sends us back to the MAIN label.

All that's left in the listing are the Procedure definitions, including the NOISE Procedure:

```
Procedure NOISE
   For L=79 To 0 Step -1
      Play 96-(20+(L/2)),0
      Wait 1
   Next L
End Proc
```

This makes the noise which you hear when the program starts, and it works by using the Amiga's internal sound chip, rather than samples as is normally the case. The Play command is used in a loop, which takes the variable L down in size from 79 to 0 and uses it in the calculation to produce the noise. We'll go into depth about this when we talk about sound, but play about with it to see what effect it has if you don't use the Wave command, or alter any numbers in the formula.

AND SO...

Now you have a game which is fun to play, but doesn't really go anywhere. Next month we'll be augmenting this program, making it bigger, better and more complex, based on the principles learned in this basic design. We'll add a two-player mode, more graphics and more sound to make this a playable and amusing diversion. See you then, AMOS type folks.

Just what your AMIGA wanted!

QJ

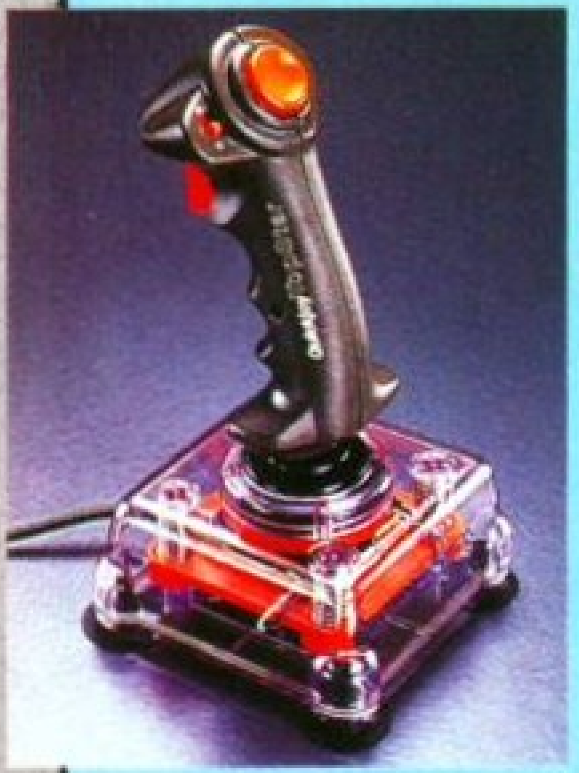
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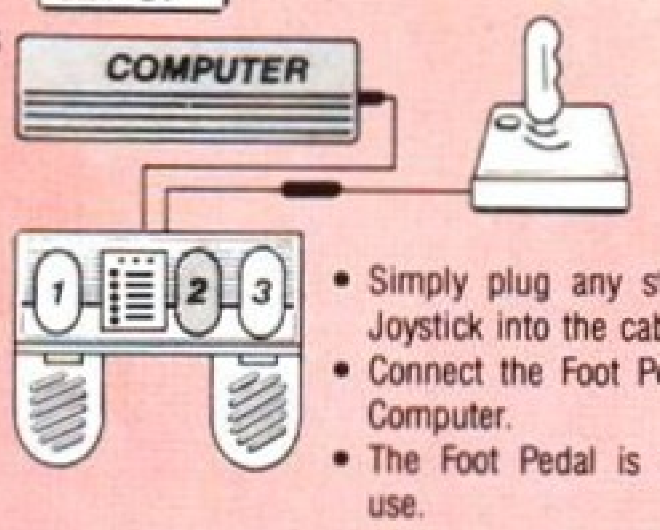
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Screenplay

It's that just-after-Christmas time of year: a time when all the really big-name games, the ones that everyone hoped would be here in time for Christmas, finally make it. So forward, troops, and take a look at an amazing range of new releases.

FIGHTING FOR YOUR RIGHTS!

Each month, **Amiga Format** brings you the very best in game reviews. We're committed to telling you exactly what's wrong and right with each game, with no holds barred. Not long ago we were all punters too, and every one of us has had a nasty experience with a duff game at some time or other. We don't want that to happen to you, so each game we receive has a whole host of tests to pass before it gets our ultimate accolade – the **Amiga Format** Gold.

Does it play well? Are the graphics worthy of our Amiga super-machine? Is the sound up to scratch? Does it work on ALL Amigas? Will it install to a hard drive? These are just a few of the challenges a good game could rise to, but still the crap games keep a-coming. What's worse is that we often see tired old garbage rated highly in other mags. Have they no shame? Don't they care about you, the poor innocent punter who shells out hard-earned cash on these white elephants?

We don't believe anyone else in the Amiga market is qualified to bring you the low-down on the vast range of new titles. Our team is made up of the some of the hardest-to-please reviewers you could ever find. They've seen it all before, and they've often been on the receiving end – and now it's their turn to answer back with the truth. Trust us – we're on no-one's side but yours!

THE REVIEWERS

Everyone's got their own favourite type of game, and at **AF**, we put that to good use. We look at each reviewers special skills (and predilictions) and turn them to your advantage. Our chosen experts know what to look for in their favourite genres, and they're much more likely to get offended if they don't find anything worthwhile. Here's what our team is up to this month...

NEIL JACKSON

AF's warlike Screenplay Ed is just the man to get conscripted into an all-out war. Find out if he knows how to handle his weapons in *HistoryLine*.

ANDY NUTTALL

Andy's an adventure-freak, and this month he tests Lucasfilm's stunning new *Indiana Jones* epic. But is it better than *Monkey Island 2*?

JAMES LEACH

A bit of a heavyweight brawler, James is the ideal candidate to take on *Streetfighter 2*, and win. Find out how badly bruised he was.

TIM SMITH

He's football crazy, but never backs a losing side. Tim joins the Rovers and attempts to take them to the top in Gremlin's new *Premier Manager*.

MARCUS DYSON

Nope, he's not a trainspotter, but he loves to spend his time hanging around on platforms. And he can do a few neat tricks with *Tomatoes*, too.

CHRIS BUXTON

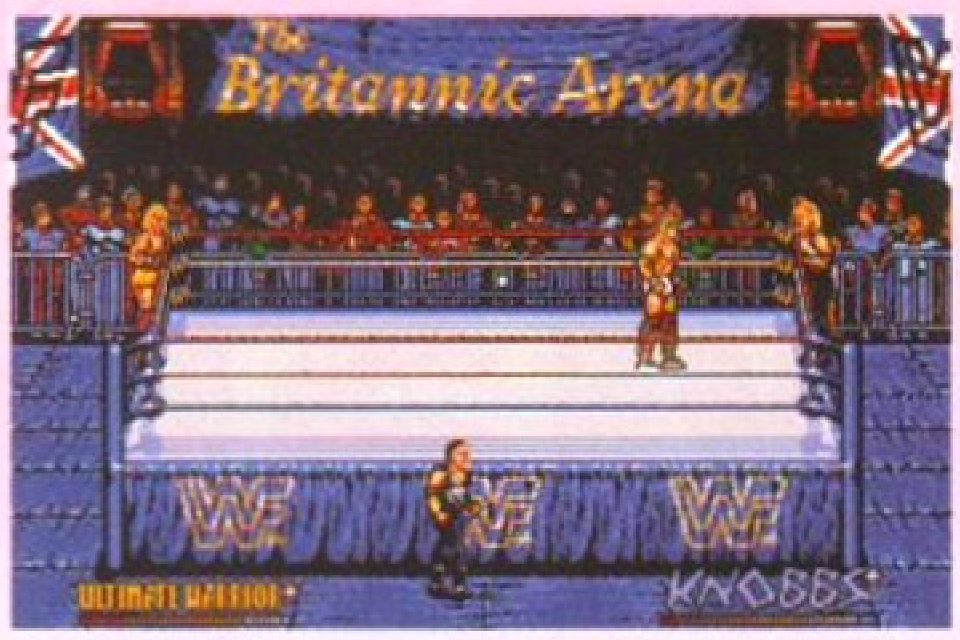
Small but perfectly formed, Chris is a total hard-man. We put him to the test on *Lethal Weapon*, and watched Mel Gibson run away crying.

FIGHT THE GOOD FIGHT FOR ALL YOU'RE WORTH



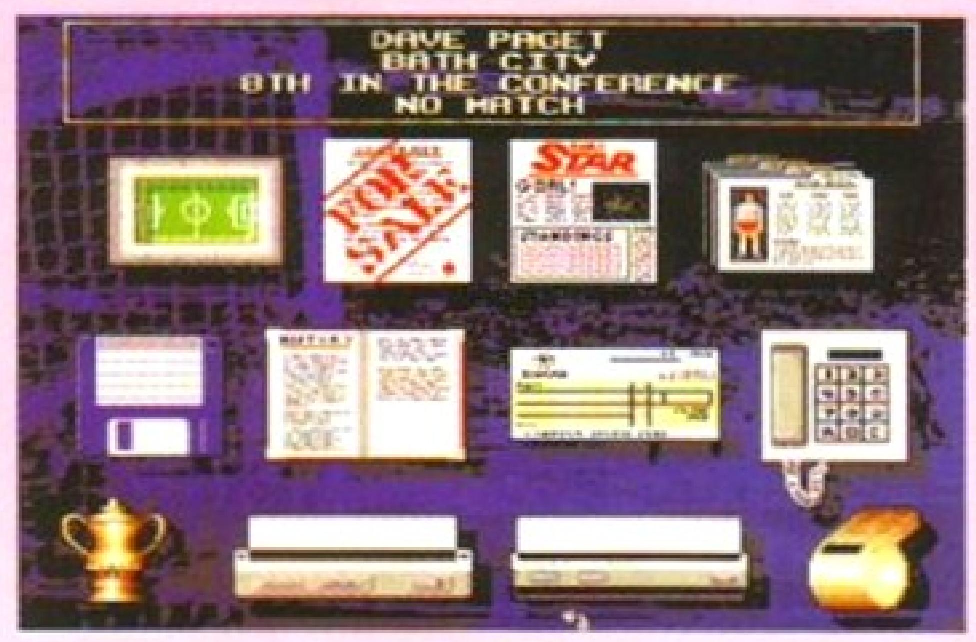
Streetfighter 2

Possibly – no, in actual fact, positively, definitely and absolutely – the most-hyped, most-anticipated and most street-cred game of the year. It was an enormous hit in the arcades which has left almost everyone in the country drooling in expectation of the imminent arrival of a version for the world's top home computer. But after all, it's just a beat-em-up, isn't it? So can it possibly achieve a decent score? Do we have a top-notch conversion on our hands, or are we going to be sneered at by Super Nintendo owners? Head for... **Page 82**



WWF European Rampage Tour

Last year, there was no hotter property than the wrestlers of the World Wrestling Federation. The videos sold like hot cakes, there were heaps of small plastic figures to be bought and as for the game... well, the game came out of nowhere to be Christmas Number One. But it was a poor game. This year the craze is still going strong: but will we get the game we deserve? **Page 64**



Premier Manager

A decent football management game? Surely it's a contradiction in terms. A footie sim that's lively and exciting as well as being in-depth, detailed and accurate? Probably quite impossible. That's what we thought, and that's where the matter rested: until one day Gremlin popped in to visit and brought with them the answer to a dedicated football fan's prayers. **Page 58**



Indiana Jones – Fate of Atlantis

We all know LucasArts can produce a mean graphic adventure game: after all, *Monkey Islands 1* and *2* still rate amongst the best games ever created. But it all gets a bit sticky when it comes down to film licences. Could the fact that they've made the plot up themselves help this one along? Is it destined to be a classic? We'll see! **Page 72**



Nick Faldo's Championship Golf

Golf games come and golf games go and, surprisingly, many of them are very, very good indeed. Even if you aren't remotely interested in the real thing, there's something about a golf game that really works. Now *PGA Tour Golf* plays a blinder while *Links* looks stunning – but is there a place for a game that does both? **Page 90**

Football management games have almost been as unpopular as footy managers are in real life, but that's about to change…



So many options, and only a 500-game season to sort them all out. Well not really 500 games, but once you get into the character of a manager, you have to start the pathetic excuse-making too.

Premier Manager

NEEDS 1 MEG

Earlier on in 1992 there was a conversation in the ***Amiga Format*** office that went something like this:

"Never, no chance, no way will anyone bring out a decent football management sim'"

"Er... who cares. Get on with some work."

"But, there are good flight and driving sims, there's even a good submarine sim, but there isn't a good footy management sim!"

"So what?"

"There are millions of people all over the country who know they can do a better job than their team's manager. So why is there no decent footy management sim yet, eh?"

"I don't care and it's deadline!"

"God, you've got about as much perception as Graham Taylor, you have."

"Watch it!"

And so it went on

Then comes *Premier Manager*. It looks great, it doesn't crash when you get to a decent level of attainment, and it includes aspects of 'The Game' other sims of its genre pass by.

Premier Manager puts you in the shoes of the most-hated and most-loved figures in football. Defenders might blunder, strikers might fluff open goals, midfielders might play hospital passes, but only managers can pull Lineker off with 20 minutes to go to howls of derision. But managers have to start somewhere, and here you start in the GM Vauxhall Conference.

You begin with a budget of over £200,000 – a sum dreamt of by real-life GMVC clubs. But this is not to be blown on the first decent libero you see on the transfer market. You have to improve the stadium's facilities and safety, plus you have to employ backroom staff, coaches, scouts and so on.

Once the 'money out' is sorted you have to turn to the 'money in'. In this case there is stadium advertising to work through. You have 48 ad placings, and making the right deals might keep you clear of your £300,000 overdraft limit.

You will probably only check on the upkeep of ads every four or so 'weeks', and once you've set up work on ground improvements, you have to wait for their completion which usually takes two months. This is an area in which you'll be in for a bit of a shock to the bank balance. Working your way from a single safety star rating to two stars costs £50,000. Moving from two to three stars leaps to an awe-inspiring £250,000.

But you're not here for the dosh. Oh no, you're here for the thrill of the game (or the jewellery if your management technique comes from the Allison/Atkinson school or the Lyall/Keegan).

There are two areas in which the game excels. Team selection and training: you don't get lumbered with players who are simply midfielders, defenders and so on. If this was the case in real football, there would be no Rijkaards, no Platinis and no Pearces – players who can play all over the pitch.

You are given players who are graded on the way they handle (what would Maradonna get?), tackle, pass and shoot. This enables you to create players who can specialise, while being able to play elsewhere – you could get attacking left-backs, keepers who (at a pinch) can hold their own in defence and so on.

You improve players by training them, or by getting your head coach to do it for you. This is where a great touch comes in, you can



The match in progress. As you can see, the graphics leave something to be desired: there they are, top right.



Your staff need you, and this neat little telephone thingie makes it so much easier to shout at them.



Two minutes away from the end of the first half, and Bath City are 2-0 down. Great come-backs ahoy?



Money, money, money – you have to get it from somewhere. In this case it's time to visit the Twerton Park advertising hoardings. If you get lucky, you might even have *Amiga Format* up there.

coach and train the players individually. You don't have to look on each of them as merely parts of a faceless section of the team. As is essential with any simulation, this adds those elements of personality to the game.

But of course, as a GMVC manager, you haven't exactly been given AC Milan's squad to muck around with. And no matter how much training, they will never be able to beat Arsenal with its squad of 'Ultimate' players. 'Ultimate' is one of the ratings given to players on the transfer market. Other ratings are Fair, Good, V Good and World Class.

> **" An excellent addition to Amiga games "**

To buy players you can use a scout (£90 a week, cheers Guv!) but this limits you to poaching players from your division and division(s) below you. Or you can go on to the transfer market where you have to bid against other managers.

Premier league?

You will normally find Conference and 'part-time' players will go for a song – sing £25K and up when you're winning – but as soon as you leap into the Second Division (or Third, if you forget the BSkyB and Premier League rubbish) you find yourself staring in the teeth of £600,000 bids. A little unrealistic really when my local Div One club were able to pick up two QPR players from the Premier League for £370,000 the pair in real life. But I guess that this is all about gameplay.

So once you've chosen your team, dabbled in the transfer market and worked out the finances, it's time for a game. With *PM* you get to see what your opposition is like in terms of strengths and style of play. Playing styles range from the dastardly 'Long Ball' or 'Route 1' via Attacking, Defending and Passing.

You can also alter your team's formation, so balancing your formation and playing style against the opposition's can take time and thought. But then it's time for you to get on the field of play and suffer as your boys forget everything you've told them. It is here I would like to see a 'team talk' module. I would also like to see better sound than white noise (talk to the Sensibles, Gremlin!) and far better in-game graphics.

No matter how much you think that management sims are for footy-addicted trainspotters, the game is still the thing and not the number crunching. Better graphics could (and with the A1200 replace 'could' with 'should') be included in a game that is supposed to simulate high-adrenaline action. What we get are some tame vignettes of players in shirts (that you haven't chosen) where the opposition seems to be playing the same colour, tapping balls around in close up in the top tenth of the screen. This is why it falls short of a *Format* Gold.

One other grumble: when you think you are financially stable, you get hit for absurd fines (bringing the game into disrepute – why? Food hygiene! Faulty floodlights!) That apart, *Premier Manager* is an excellent addition to the pantheon of Amiga games. Nicely worked, well thought out, and playable on an A500!

Tim 'Gashead' Smith

Premier Manager
Gremlin ■ £29.99

- **Great training and team selection.**
- **Stupid fines which you can do absolutely nothing about.**
- **Transfer fees are unrealistic, but it does have a good feel for the game.**
- **In-game graphics and sound could be improved somewhat.**

Verdict 87%



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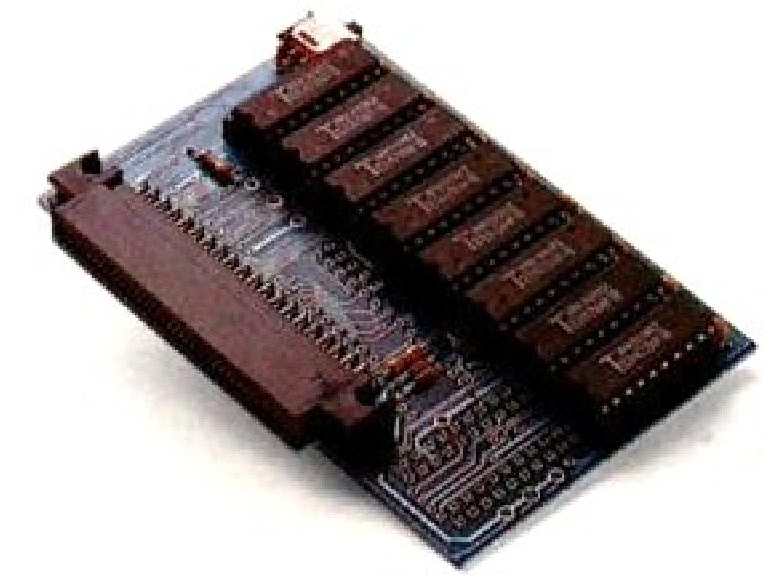
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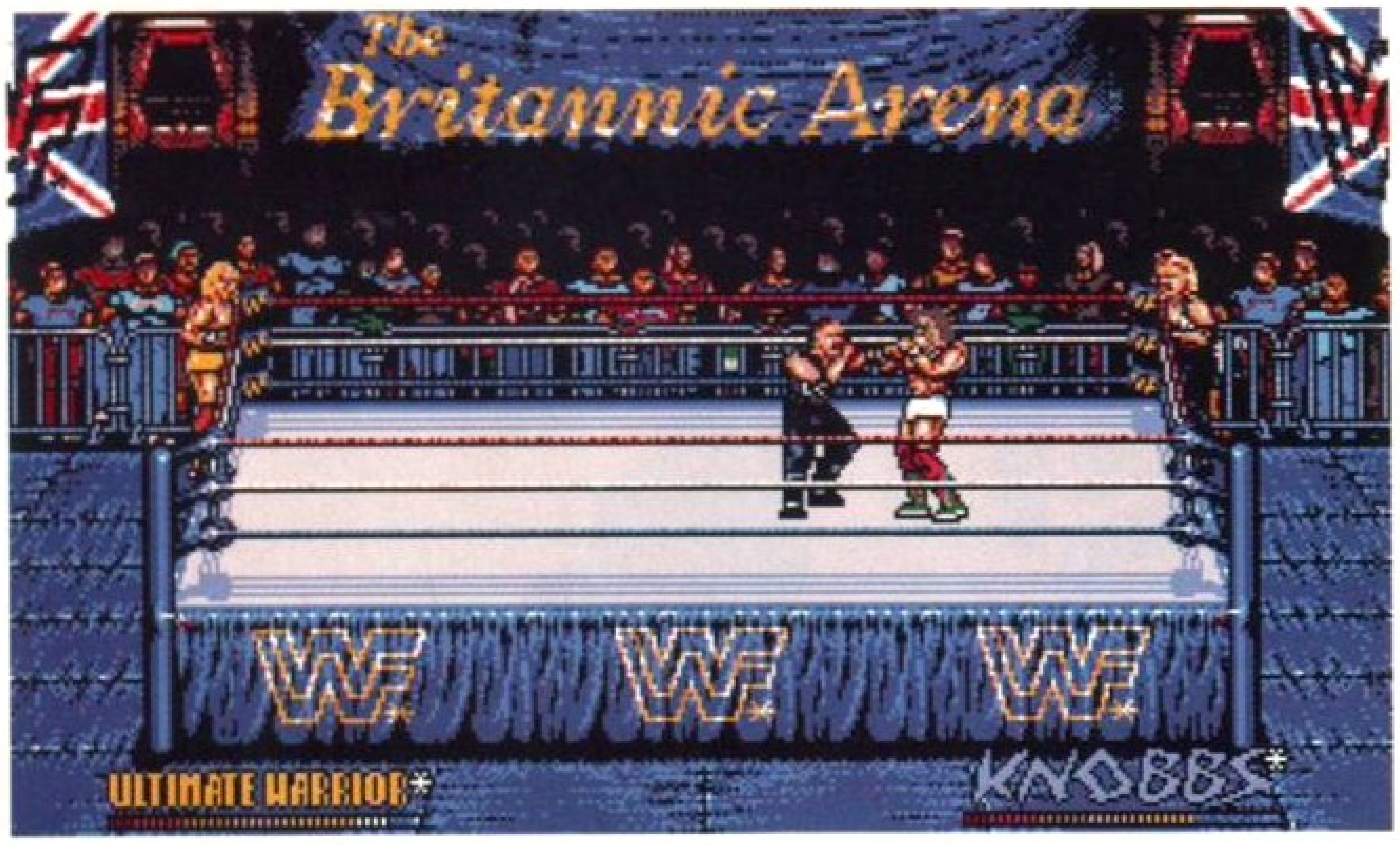
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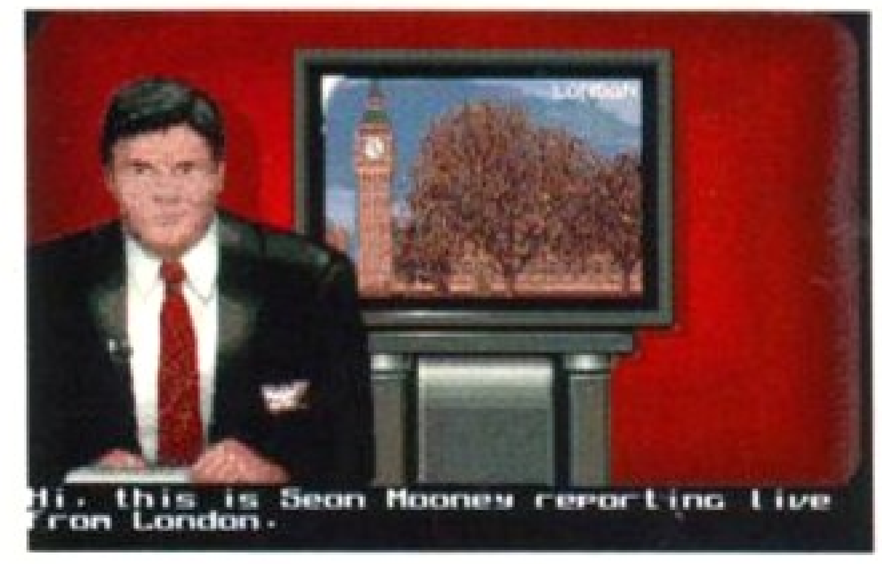
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They're big on satellite TV, they're even bigger in the good ole US of A, and they're absolutely tiny on the Amiga. If you bought your Amiga for its graphics, you'll find *WWF*'s C64 style a real downer.



Here they are: four gaily painted masters of the over-theatrical wrestling trade. An unlikely bunch, really.



WWF Rampage's classy television-style presentation merely highlights the lousiness of the game.

WWF European Rampage Tour

An insider at Ocean said of their new game, "If you think you're going to get something like last year's crap – forget it!" OK, it speaks volumes about last year's tactics, but maybe we should give this year's offering a chance. After last year's effort, surely Ocean wouldn't unleash another dog on an unsuspecting public. Would they?

Meanwhile, in another dimension, we wake up and smell the coffee. *WWF European Rampage Tour* arrived too late for our pre-Christmas issue, but in time for the shops' Christmas crush. It will sell on the strength of its licence – and not one bad review, until it's too late. Which is unfortunate.

We would've told you so...

Those who bought before reading the ***AF*** review will have experienced its delights. But for those smart enough to hang on, read on...

The game begins with chrome-effect text screens and two fat uglies shouting "Whadda rush!". Cue sports-show music and flashy logos. A button-push later, you select one of the three types of wrestling match: one- and two-player tag-team, and a two-player practice mode. Then you choose your team from: Randy Savage (snigger, snigger), Ultimate Warrior, Hulk 'The well-known one' Hogan and Bret 'Who he?' Hart. Choose two and select your controls. Player one uses joysticks or keys, with the second player using the second joystick only.

While fighting you get to read some guff on the wrestlers. After a while this gets annoying, because you can't skip it, and you have to read the whole tedious thing between each bout. This is made worse because *WWF* won't recognise an external disk drive. But even this is preferable to what happens next...

You find yourself transported to C64-land where the graphics are not the sleek-and-smooth digitised things they were a moment ago. Nope, we're back to poor-quality, lumpy-pixel sprites and second-rate, 2D backdrops.

When you start moving, the word sluggish springs to mind. Try a run by double-clicking with the joystick left or right, and you see an excuse for a running wrestler. If Randy Savage saw the way he's made to mince along, he'd be looking for a few Ocean heads to bust.

This game is aimed at WWF-influenced kids or those with a short attention span and no taste. You can strut around the ring, desperately trying to find your opponent's collision-detection, or try a special move. These are entertaining, but seldom useful in a punch-up (the method favoured by the predictable computer opponents). You can roll on the floor, or even throw your opponent out of the ring and then jump out on top of him, but it's not really a meal for one, let alone two players.

NEEDS 1 MEG

Same idea next year?

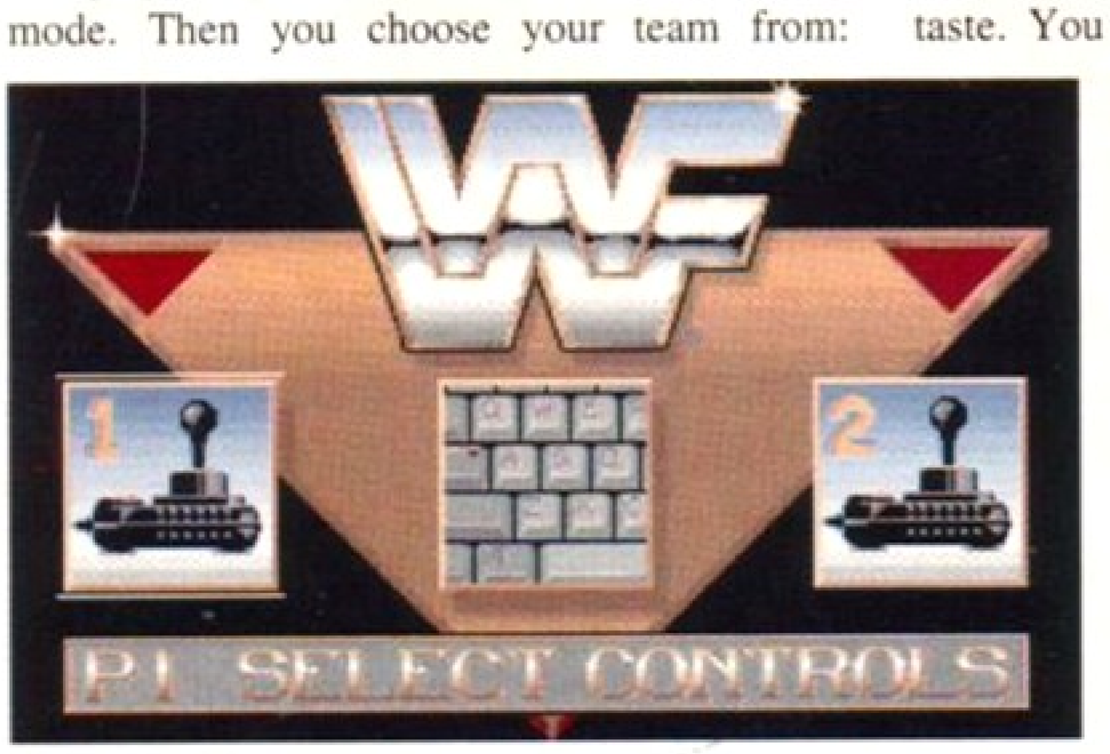
WWF is a triumph of presentation over gameplay. The theme tunes and effects glide along with the slick opening titles. But that's it. There are only six opponents to beat twice, then the legion of doom to take and you've won the whole thing. And there are only four guys to choose from on your side. The kids will be disappointed – a fact you can judge for yourself when they've given it up by Boxing Day. Happy Last Year, all over again.

Neil Jackson

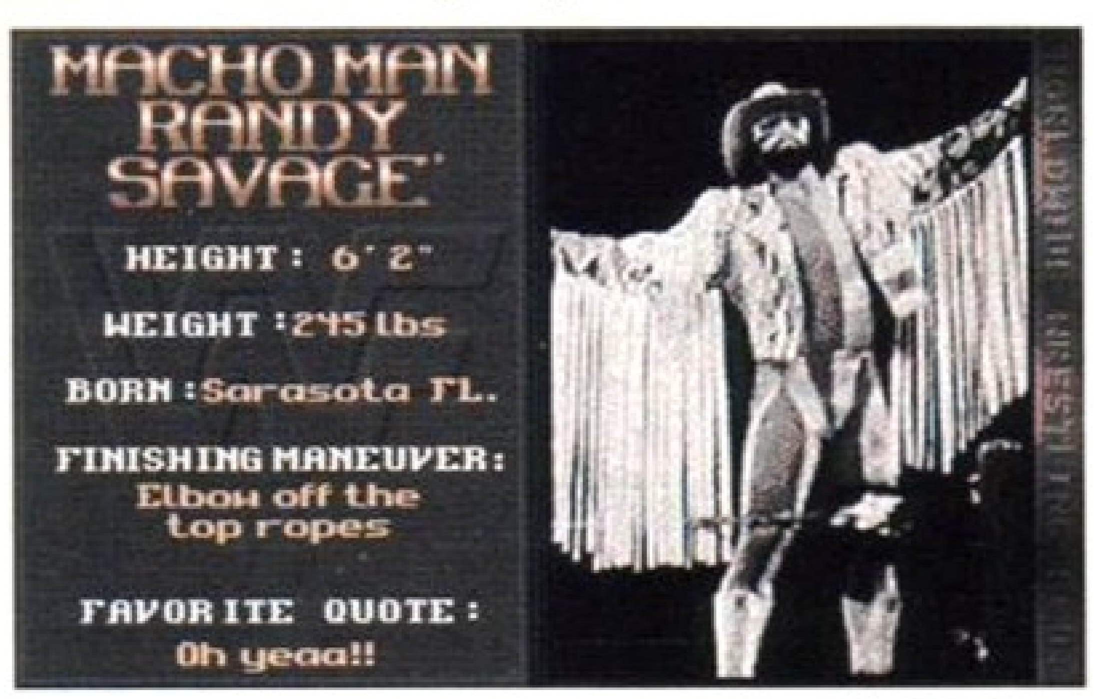
WWF European Rampage
Ocean ■ £25.99

- **Eh? Where's the game? Compared to *Streetfighter 2*, this is sad, sad, sad.**
- **Ropey controls and chuck-inspiring in-game graphics spoil what's there.**
- **Nice front-end, lovely music and some God-awful gameplay.**
- **About as pleasant to play with as a wrestler's jockstrap.**
- **Nooooo! Not again! Take it away George: "Last Christmas, tra-la-la la la..."**

AMIGA FORMAT Verdict 18%



In a wrestling game, controlability is everything. But the modes on offer in *WWF* are a bit limited to say the least.



Nice bloke, nice coat, but he looks a complete pillock in the actual game. Will he be a happy man when he finds out?



New team on the block, ICE, have taken a subject close to every programmer's heart and turned it into a trading game.

Piracy

ICE ■ £29.99

Piracy, as Robert Maxwell would have told you, is a tricky profession. Admittedly its image has been improved by the pursuits of Guybrush Threepwood and co, but it's still a bloodthirsty way of life for aspiring crusty sea dogs. Except the whole concept's been gloriously sanitised in this strategy cum beat-em-up game.

Anyway, you've got a ship, 150 duckets, a couple of ship mates and a lot of sea to explore. By trading and robbing for treasure you can increase your personal wealth and thus purchase larger, quicker ships and more salty shipmates to man them.

With a bit more thought this could have been a promising trading game in much the same way as *Elite* was. In effect it's inordinately tedious. The fighting sections are shoddily executed with sluggish controls, the sea journeys are boring, the adventuring content is minimal and the trading's duff. I can find little to recommend this game except that one of the islands is called Melon.

Andy Hutchinson

Verdict 50%



Getting yourself orientated can take a long time because there isn't an annotated screenshot of the cockpit and its displays.

AV8B Harrier Assault

Domark ■ £39.99

Great things were expected from this flight sim, fresh from the makers of the excellent *MiG-29 SuperFulcrum*, but sadly, the result is a a let-down. On an A500, you'll go nuts trying to hold the feisty Harrier on the straight and level, and that's before you even touch the rotating jet nozzles which make it so famous. It's not a bad simulation; it's just not a very good one. The A500 is unable to provide a quick enough frame update, resulting in uncontrollability all round. An A1200 provides much better results, but sadly, *AV8B Harrier Assault* still suffers from a few control problems which make life difficult.

The manual is written for the PC and refers to things you can't get to work on the Amiga. It's badly arranged, with tutorials in the middle, explanations in random places and the key-info tucked in the midst of heaps of text. It's a realistic sim with a huge strategy element, and loads of annoyances which destroy the fun.

Neil Jackson

Verdict 60%

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Women swoon over him, men envy him and every movie executive in the world wants him. But **Amiga Format** tracked down **Chris Buxton** and got him to review Ocean's…



Instead of a boring menu system, *Lethal Weapon* has Police HQ. Here Riggs and Murtaugh can walk around and go through the various doors to select different missions, save-game positions and choose which of the two cops to take on the next mission. In an orgy of special FX the secretaries actually turn when you walk past them!

Lethal Weapon

NEEDS 1 MEG

Ho hum, another movie tie-in. Well, the *Lethal Weapon* movies have been around for about four or five years now, and show no signs of getting any more original with age. They're based around two cops with contrasting characters – a placid family man and a wild, disrespectful renegade – who, braving every cliché in the book, overcome their differences, work together to fight corruption and have a few jokey male-bonding scenes along the way. Usually at a hot-dog stand. Hollywood thought long and hard about this one. Oh dear, this is all getting a bit cynical. Still, let's take a look at the facts.

Action men

Successful action movie becomes computer game. Any votes for a complex simulation? A *Monkey Island*-style adventure? How about a platform shoot-em-up then? Staying true to the film's lack of innovation, the programming team have come up with a good old left-to-right, scrolling platform game. But, let's face it originality was never an essential quality for a great game.

The plot is based loosely on the three films and the main characters look roughly like Mel Gibson and Danny Glover. The action starts off in police headquarters where Riggs and Murtaugh (Gibson and Glover) have to solve three cases in order to get a special assignment. When they finish the special assignment they get drafted into Internal Affairs and go after some corrupt big-wigs in the force who've been selling off confiscated firearms (yes, a little bit of politics, there).

The first three cases can be attempted in any order but the manual recommends that you take case one first, then case two and finally case three. So much for freedom of choice.

There's another decision to be made before you can get down to action – which of the cops to have. Riggs is better at hand-to-hand combat, while Murtaugh carries a more powerful gun, but again the game dictates your choice. Some levels are full of extra ammunition, so you'd be a fool to pick Riggs and his weedy gun. In other levels the ammo's thin on the ground so Murtaugh is out of the question.

Sewer bound

With your 'selections' made it's off to the first case. The dynamic duo must capture the profits of a drug cartel that are stashed on a ship at the harbour. The second case has them exploring the city's sewers searching for terrorist bombers, and in the third they've got to rescue an informant from a derelict factory.

The object of each mission may differ but they all play in the same way. The standard mix of running along shooting heavies, jumping on to moving platforms and picking up power-ups and energy refills doesn't change from level to level. The enemies always appear in the same places. They always fire in the same way. There's an easy route across the platforms, or you can risk losing a life and go for a hard-to-reach bonus or power-up. And after a couple of levels, at the end of each case, there's a boss villain who needs a massive load of hits to destroy.

So far all this seems OK, and it is. The graphics are crisp and the locations look good – more colour and some parallax wouldn't have hurt, though. The music's not bad and the sound of the thudding impact of the bullets is

THE CASE OF THE MYSTERIOUS PLATFORMS

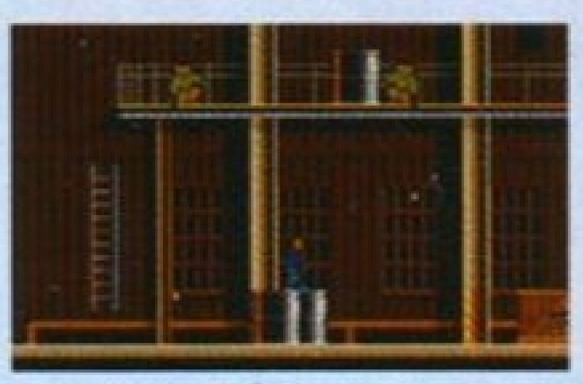
All over the city strange platforms were appearing. Riggs and Murtaugh smelt a conspiracy…



Case one – The Export Gang. The mission – a search for stolen cash. The game – platforms as far as the eye can see.



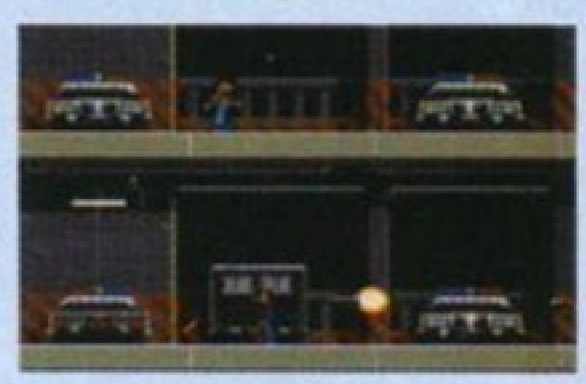
Case two may be about stopping a terrorist bomb squad but it's much the same old platforms as Case one's docklands.



Case three breaks off at a real tangent – saving a kidnapped informant – and goes for an all-new, er, platform look.



Case number four is classified so I can't talk to you about it. I did get there though, honest. No, straight up, I did. Trust me.



In the final case the cops have to sort out their corrupt bosses: or are they just minding the car park? I could never work it out.



There's nothing worse than a bad guy wielding several sticks of dynamite. Especially when he's standing guard over the only two extra cartridges you've managed to find in the whole level.

suitably gruesome. But after an hour of plugging away you begin to get the impression that there isn't a whole lot to *Lethal Weapon*.

When you've overcome the initial urge to race through every level with guns blazing you'll find the only way to make it through a case with your lives intact is to plod along waiting for an enemy to appear, dodge their fire, take 'em out and go on to the next one. The platforms' layout make things tricky and when you first go through a level it's hard to tell if some are platforms or are just part of the scenery – until you plummet off screen and lose another life.

" A desperately average game that's almost identical to every other platform game around "

Once you know where to go and when to shoot, the game gets frustrating because you just want to get on with it and not have to wait around for the right moment to fire or jump. All this timing and practice is what platformers are all about, so what's the problem? Well, when it becomes irritating instead of challenging you know the game's not for you. If the game had played a bit quicker, had a few more enemies here and there, maybe (Heaven forbid!) tried something new it could be something more than what it is. There are no deep, or even shallow puzzles and even the slightest bit of detective work would make the game interesting. As it is there's only one route through each of the levels and the occasional door switch to push, and it's never a million miles away from the door.

All these niggly points show just what an ordinary game *Lethal Weapon* is. It isn't badly programmed, it all works very slickly and will probably give anyone who buys it a few days' fun. But there's nothing impressive about it all – even as it stands, a simultaneous two-player mode could have rescued it. No, it's just a desperately average game that's almost identical to every other platform game you've bought, played and can now see on sale at £9.99 on a budget label.

If you're thinking about buying this because you're a fan of the films, you'll find little to link the game with the movie apart from a nice picture of Mel, Danny and the stumpy one with grey hair who's not done anything decent since *Raging Bull* on the box. *(What about* Goodfellas*? – Ed.)* If you're thinking about buying this because you want another platform shoot-em-up, think again.

What's here is nothing new and you already have something similar in your software stash. Technically it would be at home on an 8-bit console, not an Amiga. These sort of games need to be noisy, dazzling, fast and frantic, as the console ads on TV scream at us, and sadly this game hasn't kept with the pace.

Chris Buxton



And the winner of the 'Nicest Platform In This Game' award is the girder swinging on a chain.

Lethal Weapon
Ocean ■ £25.99

- Uninspired platform shoot-em-up that feels like you've played it before. A dozen times.
- Uninspired platform shoot-em-up that feels like you've... ooh, I've just had an incredible feeling of déjà-vu.
- No frills in the presentation but graphics look good enough and the in-game music is pretty good too.
- Not abysmal, not outstanding and not really worth it.

Amiga Format Verdict 64%



Considering that they are one of the most evil creations in the universe, Daleks look pretty stupid. And anyway, how *do* they get up stairs?



The Doctor reaches the London Underground only to find that the 4.25 to Marble Arch has been delayed, but that's the least of his worries.

Dalek Attack

Alternative ■ £15.99

It was way back in 1963 that William Hartnell, the first Doctor Who, emerged from his police box Tardis, and a whole generation of impressionable young children spent much of their lives cowering behind the couch, peeking out now and again to see how the most famous Time Lord in the universe was faring in his battles against the Daleks, the Cybermen, the Yetis, the Autons, the Ice Warriors and various other intergalactical bad guys.

So it's strange, in many ways, that it has taken so long for The Doctor to find his way on to your Amiga screen in the form of *Dalek Attack*. The action is set in the year 2254 when the Daleks and their evil creator Davros have taken over the world. Their evil plot is to turn the planet into a munitions factory to supply the Dalek armies.

The Doctor must thwart their terrible aims by running around a series of platforms, blasting various baddies and rescuing hostages. It's worth mentioning here that not all the enemies are Doctor Who originals but include Ninjas and others who have absolutely nothing to do with the TV series. Anyway, after a promising introduction level, *Dalek Attack* is a tad disappointing.

Although the graphics are well drawn and the music is of a reasonably suitable variety, the character animation is none too hot. Basically it's the gameplay that really lets down *Dalek Attack*. It would be better if it wasn't a shoot-em-up, and even better still if it wasn't so predictable – whenever you walk through a door there's inevitably a couple of Daleks waiting to exterminate you. Actually there's an important aside here. Daleks roll around on wheels, they are incapable of jumping, so how the hell do they get up stairs. Obviously they can't. And if they can't how did they take over the Earth. Not much good just taking over the downstairs bit of the Earth, is it?

Anyway, this is only an average game, admittedly at a good price. But as anybody who has taken a serious interest in Time Lords will tell you, the essential point about Doctor Who is to outwit the enemy by skillful use of time travel, and sonic screwdrivers, and by having pretty women as assistants and cute mechanical dogs called K-9, so this would have been a better game if it was an adventure instead of a shoot-em-up.

Dave Paget

Amiga Format Verdict 59%

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After Monkey Island 2, the Amiga world has waited with bated breath for the next adventure from LucasArts. Indy's back, and this time he's brought SCUMM with him…



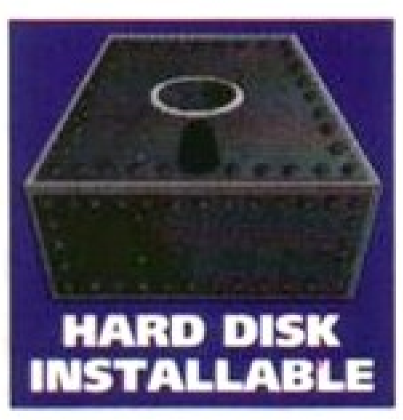
"She may be beautiful but she doesn't know a thing about internal-combustion engines." The lovely Sophia watches Indy fix the wheels. We don't want to give any clues away here, of course...

Indiana Jones and the Fate of Atlantis

In the last couple of years LucasArts have made rather a good name for themselves with their graphical adventure games, ever since the success of *Loom*, followed by *The Secret of Monkey Island* and then the awesome sequel *Monkey Island 2*. Following on from the runaway success of the latter game, they have taken SCUMM and iMUSE (the story and music systems from *Monkey Island 2*) and applied it to a film licence.

"Film licence!", I hear you cry. Well, yes – not all of them have to be disks worthy of nothing better than reformatting. For one thing, it's not really a licence, because there isn't actually a film that it's based on – Lucasfilm enjoyed doing the previous *Indy* games so much, they thought they would make up a plot for another one. And though previous *Indy* games were less impressive, this is just what you you would expect from LucasArts.

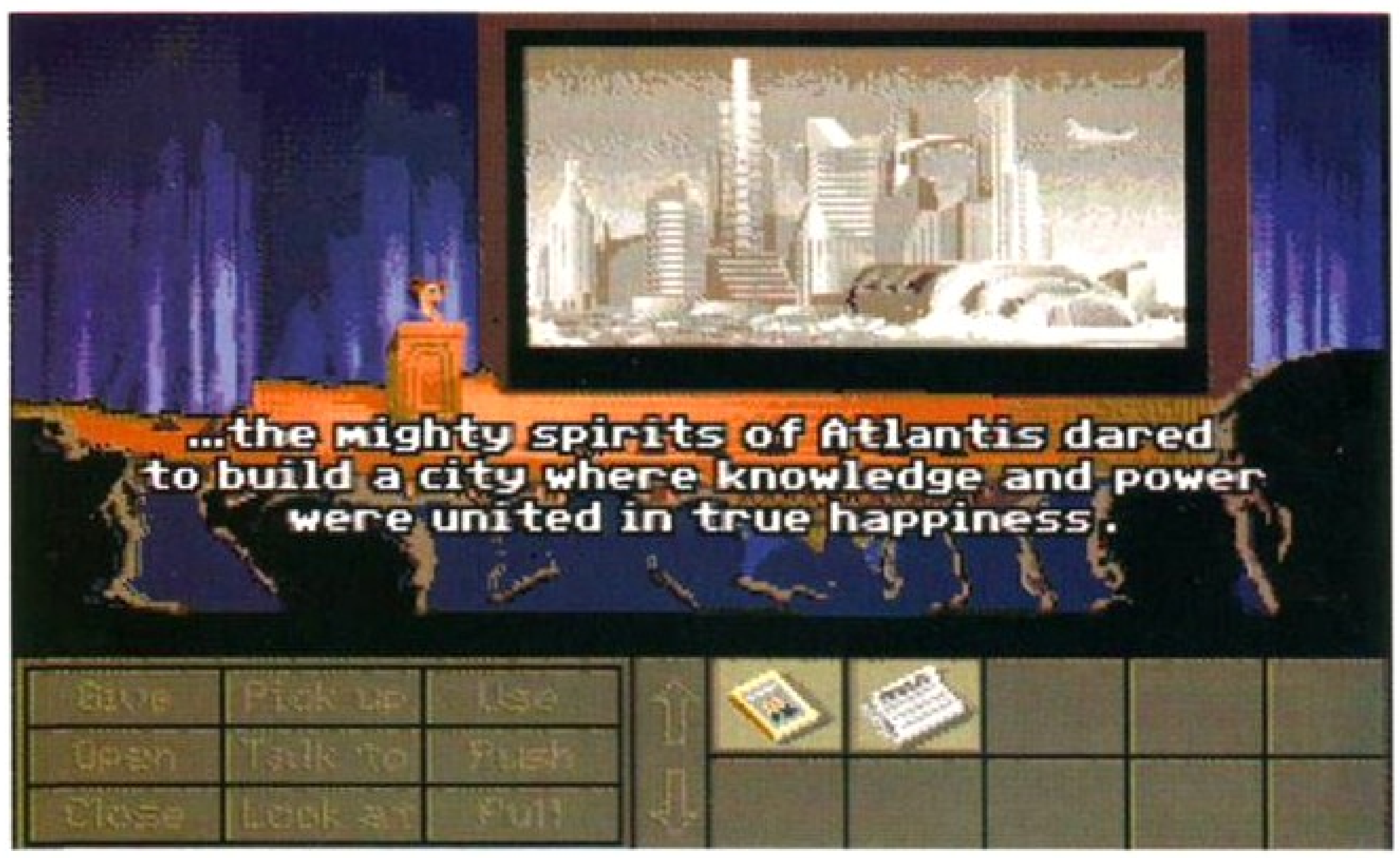




iMUSE-ing storyline

The game begins with a classy film-style introduction and then a bizarre rendition of the Indy theme tune plays in the strange-but-excellent iMUSE system. While this goes on Indy makes his way down through several levels of an abandoned college, trying to locate a missing statue. You control Indy at this point, but you don't have to solve anything just yet.

The reason he's after the statue is that it contains a small bead made from a special metal, which can be used in a similar way to Plutonium. If this bead gets into the wrong hands, a bomb might be made which could level out the odd country or two.



Atlantis or Metropolis? Sophia, world-renowned psychic, explorer and old flame of Indiana Jones, draws a large crowd for her speech about Atlantis...



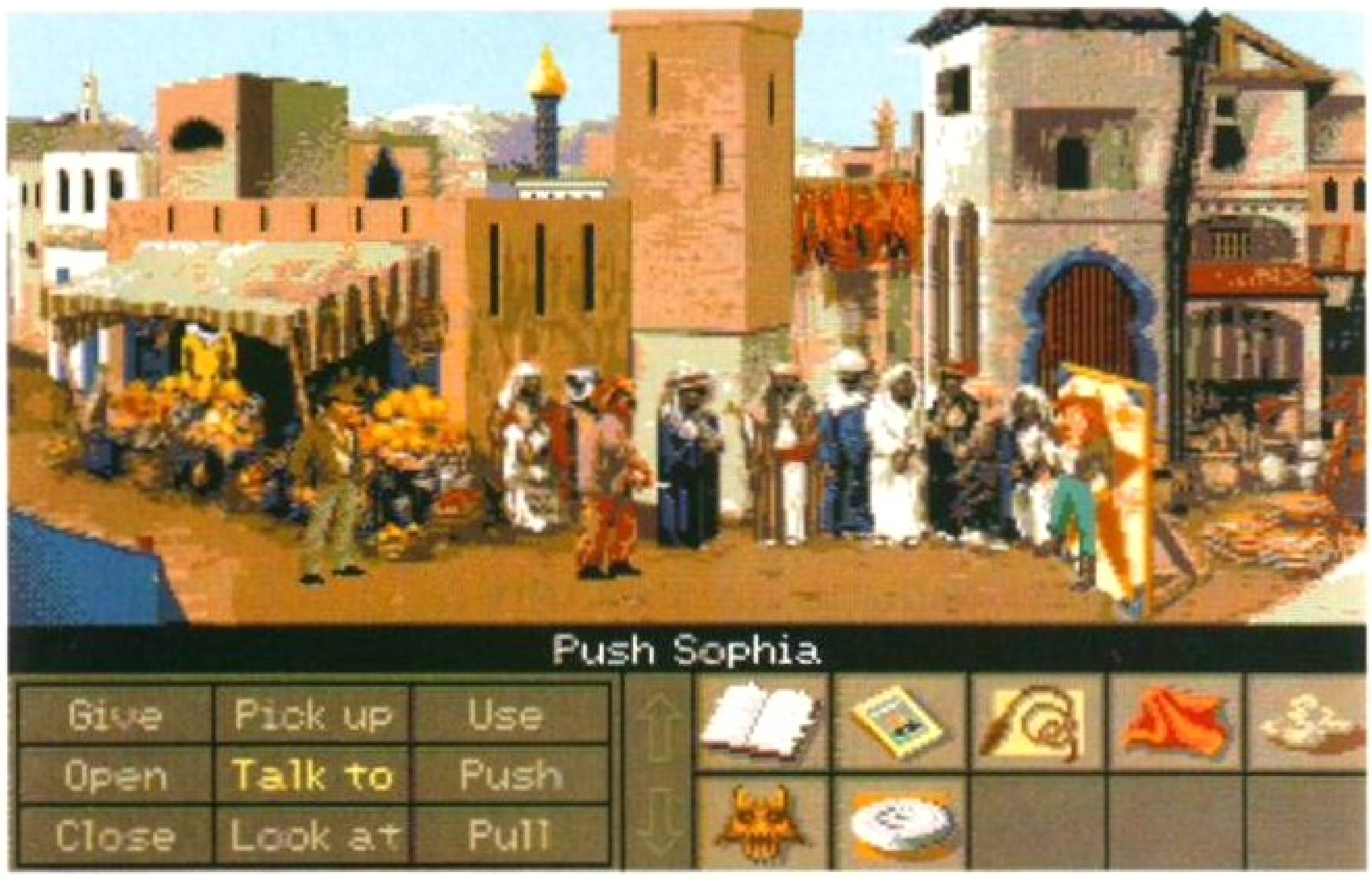
Indy isn't as thick as his macho features make out – a square peg in a round hole is no match for him...

When the game proper starts, the similarity to *Monkey Island 2* becomes apparent straightaway. Because the same story system is used, the screen layout is very similar, and the same keys are used throughout. This is a good thing, however, because the original system was great to use, and *Monkey Island 2* players will feel instantly at home.

One addition to the story system is the fist-fight. Several manoeuvres are available should you get into a scrap, and these are operated via the mouse or keypad – if your Amiga has a keypad, that is. If the idea of fistfighting doesn't appeal to you don't worry, because you can take three different paths through the story and only one of them has you constantly bashing your way through the adventure.

Each path involves different actions on your part, and meeting different people, but all three paths have the same ultimate goal – to reach the lost continent of Atlantis. The first is the 'Team' path, where you team up with the lovely Sophia, ex-colleague turned psychic, and combine your skills to reach the end. At some points during the game you will need to control Sophia herself, and the inventory display automatically switches to Sophia's possessions – another great touch.

The next path is 'Wits', which is where you must use all your intellectual powers (not humour) to overcome various puzzles during the game. The final one is 'Fists' where – yes, you guessed it – you must rough your way around the world, fighting your way out of



Nudged on by Indy, Sophia gets her come-uppance in Algiers on the wrong end of a knife-throwing act. Our hero, not wanting to cause trouble, looks on quietly.

troublesome situations. The paths do cross at various points during the game, in true time-line style, so even if you choose the Wits path you will sometimes need to fistfight; or if you plump for Fists you will occasionally need to use a bit of nouse.

Action adventure

Whatever path you choose, a huge variety of scenes and challenges await you. These are sometimes funny, sometimes frustrating, but never, ever dull.

The puzzles are very well thought-out, with some exquisite, subtle elements that give you a real kick when you solve them. Also, some action elements are mixed in with the adventure, such as controlling a balloon across a desert, and guiding a submarine through murky waters. Those of you who are horrified by the thought of arcade scenes in your adventures, don't be – they are few and far between, and merely serve as a break from the puzzles.

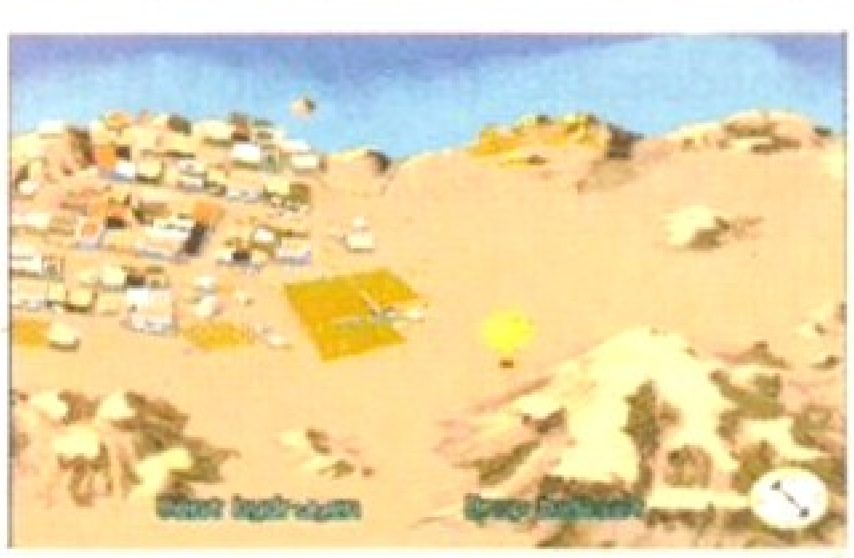
The story is littered with elements that are genuinely funny, far more than just being there to break up the monotony – check out the scene at the hotel in Monte Carlo where Madame Sophia is holding a seance. The lights have suddenly gone out, and you must make yourself into a ghost by using a bed-sheet, a scary mask and a flashlight. The ensuing scene is nothing short of hilarious, one of those points when you're really glad that you bought the game. We didn't feel, though, that it was a good idea to include a picture of the scene here – it would spoil the surprise for those of you who will play it.

“ It's imaginative, well constructed and the gameplay is smooth and slick ”

There's no doubt about it, LucasArts have done it again. *Fate of Atlantis* is a huge, stunning graphical adventure based on the already tried-and-tested SCUMM format. The story is imaginative, the puzzles are well-constructed, and the gameplay is smooth and slick. As with all multi-disk graphical adventures, it's necessary to swap disks constantly when playing from floppy disk. This is unfortunate, but it shouldn't put you off the game, and it's yet another good reason for saving up to buy that hard drive you've been promising yourself.

If any criticism were to be made it would probably be that the storyline is quite linear, in that each puzzle must be completed before moving on to the next. This is noticeable here because we were spoiled with *Monkey Island 2* and its highly non-linear approach. It's a minor point, anyway, and shouldn't put you off buying what is one of the best Amiga adventures ever.

Andy Nuttall



A typical arcade sequence from Indy – keep the balloon away from the ground and fly south...

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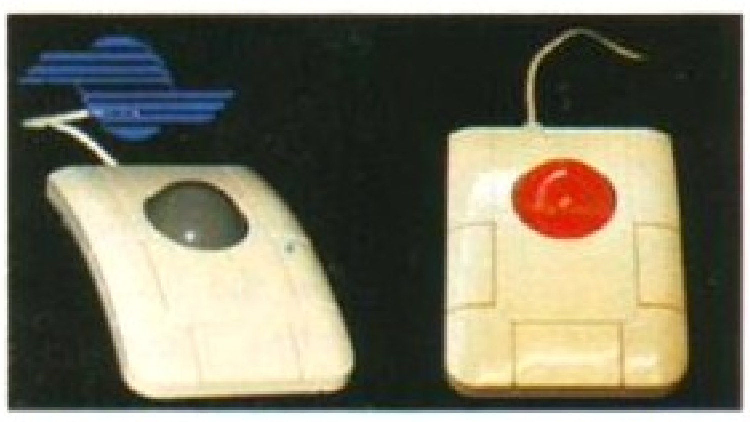
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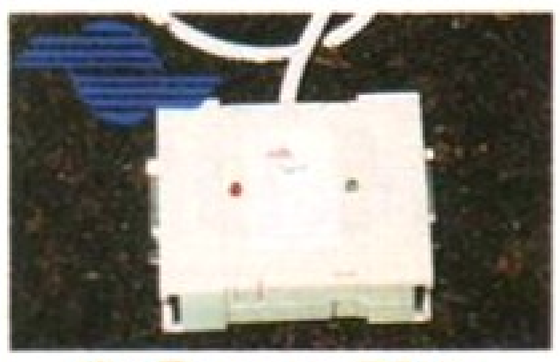
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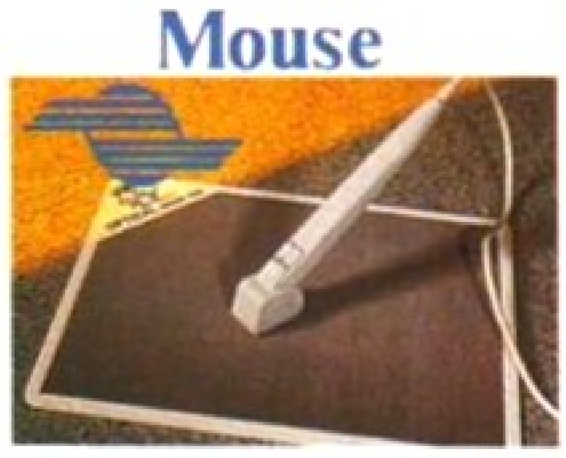
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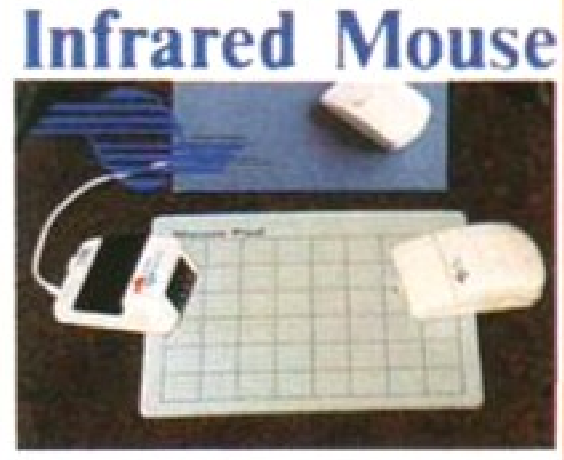


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It's a matter of timing, and if you get your timing wrong, there are plenty of perils to bring you to a squelchy, tomato-ketchupy end. Almost certain death awaits Terry tomato, as the heavy weight hurtles downwards.

Bill's Tomato Game



If you were a tomato, and you fell off the back of a lorry (no, I mean you really fell from the back of a moving, heavy-goods vehicle) the best you could really hope for is to become low-salt ketchup. At least if you were a conventional tomato, that is. Terry and Tracy are no ordinary tomatoes though. They are the hero/heroine of this new puzzler from Psygnosis. Our Tom and Trace simply bounce down the road in a manner more befitting those little 25p dayglo balls you get in bargain stores. Until the appearance of one Sammy Squirrel that is. By now you will have realised that alliteration is the order of the day, in this sickeningly cute scene-setting story.

But Simon, sorry Sammy, abducts Tamara, sorry Tracy and Timothy, sorry Terry has to rescue her. Not only is this a preposterous premise (see, even I'm getting the hang of it now) for a puzzle game, but it's completely irrelevant too. All I can say for the entire intro to *Bill's Tomato Game* is that it's best avoided. Problem is that you can't. No amount of mouse clicking or joystick fire-button pressing will cut short this tedious tale.

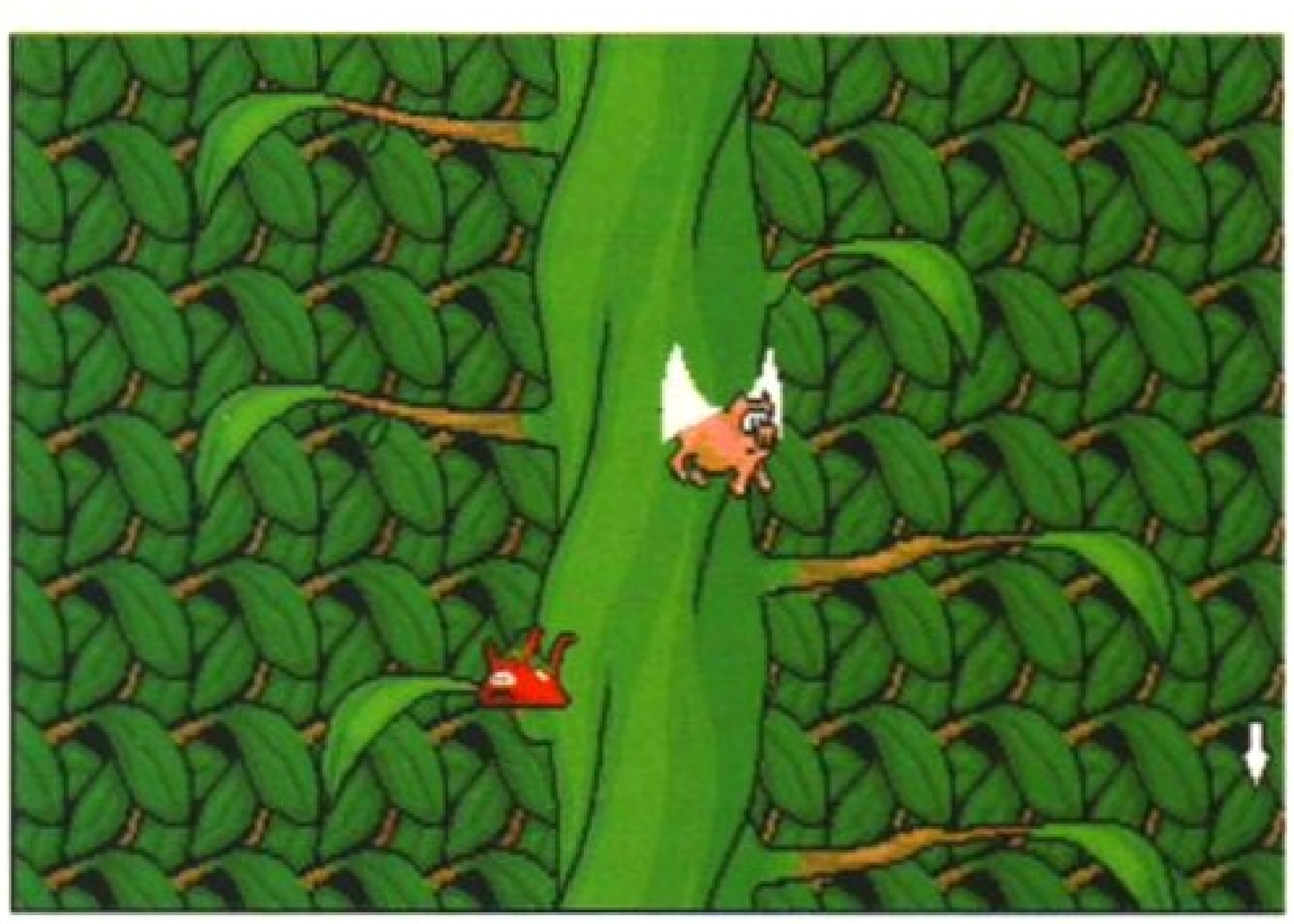
Tedious intro

AH! Some action at last, once the nicely animated, but tedious intro is over it's time to Play *Bill's Excellent Tomato Game*. Did I say excellent? Well it is. Psygnosis put out many games in the course of the year, most of them are solid, but uninspiring. But when Psygnosis put out a puzzle game around Christmas, it's time for every lover of Psygnosis puzzle games that come out around Christmas to sit up and play close attention. Just look at their track record. In 1990 there was *Lemmings*, in 1991 there was *Oh No! More Lemmings*, and now in 1992 there is *Lemmings 2* and *Bill's Tomato Game*. You can bet it's more fun than lots of things that are less fun than it…

So Steve Squirrel has nicked your bird, and you have to rescue her. It's terrible how these computer games reinforce macho sexual stereotyping isn't it? The rescue involves climbing this kind of magic beanstalk plant that Sigmund Squirrel lives up. Along the way you are required to tackle various screens that require you to get from side A (the left) to side B (the right). Sounds simple doesn't it? But the clever coders at Psygnosis have put various obstacles in your way. And the only way to avoid these hardships is to strategically place various 'props' around the screen. These props are the ludicrously alliterative frumulous (?) fan, the tomato trampoline, Jeremy jack in the box and the blocking box. Once you launch Trevor he interacts with these 'props' in a manner that can either facilitate his traversing of the screen or lead him to complete liquidation. The choice is yours.



Just dodge the sucker gun bullets, bounce on the trampolines and get across the screen, what could be simpler? Erm... lots of things?



All the levels are reached by climbing the magic beanstalk, the creatures you meet on the way don't exactly help your ascent.

Lucky escape

The game escapes the problems of the usual set-it-up-and-let-em-go puzzle games by letting you stop Terry in his tracks and set him off again with a simple click of the mouse button. Indeed some screens actually require you to send an initial tomato salvo, let him trigger a switch, then send another to complete the screen.

A time limit decides your success on each screen and until this is exceeded you have an inexhaustible supply of tomatoes. Which is for the better really, because some of these screens are not quite as easy as they might be, in fact some of them are complete sons of female dogs. Altogether, Psygnosis have managed to do something original once again. There's no chance of this ever being as successful as *Lemmings*, but for many an hour of taxing distraction, you couldn't do much better than this

Marcus Dyson

Bills Tomato Game
Psygnosis ■ £25.99

- The intro is nicely animated, but ultimately unnecessary and tedious.
- Superb puzzles start simply enough, but steadily become brain-trashingly difficult .
- Free Heinz tomato ketchup, comes in handy when you visit the burger bar.
- Original gameplay concept makes for hours of pure puzzling.

Verdict **88%**

Super Super Heroes Compo

Psygnosis celebrate the impending Super Heroes game with a fantastic competition.

Next month sees the release of *Super Heroes*, a beat-em-up with a difference form Psygnosis. The difference is that before you do battle in this game you get to construct your own superhero. You can do good and fight for God, Justice and the American way with a range of super powers of your own choosing. And with all the options on offer it's possible to create more then 800,000,000 men of steel, which is more than Marvel and DC ever did, both put together.



Meanwhile back at the lab... *Super Heroes* gives you the chance to choose your own super powers, it's a lot less risky than being bitten by a radio-active spider.

Have you ever wondered how they do those special effects in the superhero films and television programs? If you have, Psygnosis are offering you the chance to find out. The lucky (and knowledgeable) winner will get a family ticket to the Granada TV Studios, Five super hero videos and a copy of the *Super Heroes* game, all courtesy of Psygnosis. Fourteen lucky runners-up will win copies of the game too.



Once you've built your Ideal super hero, it's time to go out and schlock it to some street trash. Don't try this at home, it really is a bit anti social.

All you need to do is know Lex Luthers from Luther Vandross' and you could scoop yourself a fantastic prize. As you know, every superhero has an alter ego, a disguise they use when they go to do the shopping at Sainsbury's, or down the local launderette. All you need to do is tell us which superheroes go by the names below. And look out for a full review of *Super Heroes* from Psygnosis soon in ***Amiga Format***.

THE QUESTIONS

Name the super hero equivalents of these mere mortals:

1. Clark Kent
2. Bruce Wayne
3. Reed Richards

THE RULES

Same as always: we can't enter, our relatives can't enter, and anyone we've told the answers to can't enter. Batman and Superman can't enter either, so that leaves you. Enter now.

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HISTORYLINE

1914-1918





HISTORYLINE 1914-1918 is a strategy war game simulation set in the period of the first world war.

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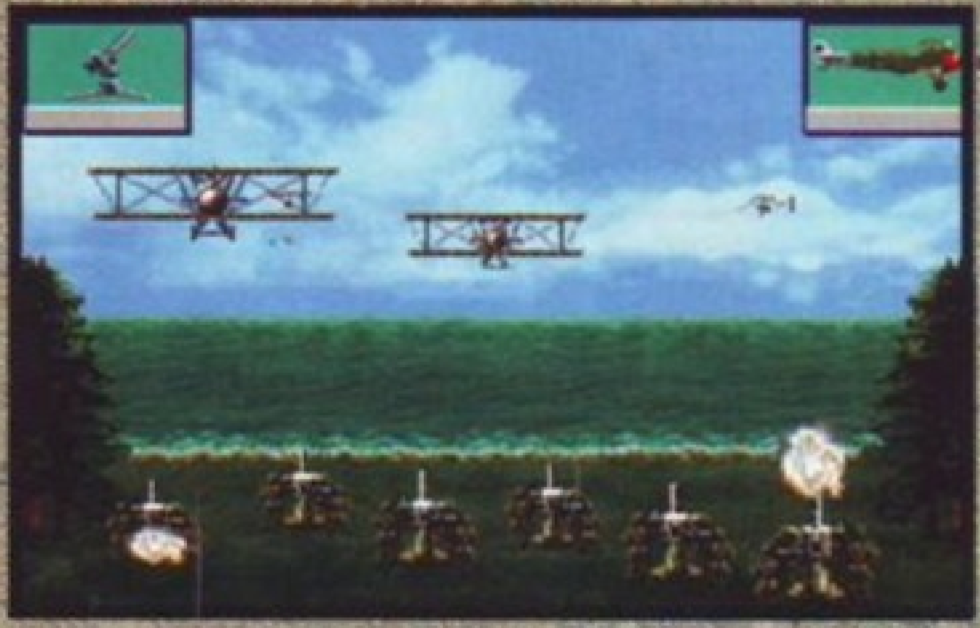
HISTORYLINE 1914-1918 contains a wealth of historical and technical information. This is not only illustrated beautifully on the screen during the course of the game, but is also available for your reference in the extensive and meticulously researched manual.

Making it easy to learn and to play, HISTORYLINE 1914-1918 is a must for everyone interested in an extremely high quality, massively challenging, addictive, and hugely accurate strategy war game simulation.

Hours of enjoyment - *Guaranteed.* You may even learn something!











Screen shots show MS-DOS VGA version. MS-DOS version supports Adlib, Soundblaster, and VGA 256 colour mode graphics. Amiga version supports accelerator boards and 64 colour mode graphics.

Designed and developed by the same team who created Battle Isle.
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Did you hear those chattering schoolkids on the bus yesterday? Well this is the game they were all yapping incessantly about. Now it's on Amiga...



Some of the moves appear to have little combat value. Honda's gentle knee grab, for example. This induces a drowsy feeling in Dhalsim, who will then let Honda leap up and down on his throat.

Streetfighter 2

This is it, then. The much-vaunted *Streetfighter 2*. The game that, supposedly, everybody's discussing on buses. The game that's causing a generation of Far-Eastern kids to grow up with little joypad-pushing stumps instead of fingers. The game that's giving rise to a rash of children christened Blanka, Dhalsim, Edmund Honda and, worst of all, Ken. And you could be about to subject your Amiga to this.

The idea is simple. You choose one of eight characters, each with different skills and strengths. You must then fight the others in turn. Obviously you're hoping to punch and kick them to death. If you succeed you get to fight a series of big bosses: beat them and you can rightfully claim to be best in the world.

There are seven skill levels per player, giving a total of 49 possible different combat ratings for each fight between two contestants. These are the key to the bizarre longevity of *Streetfighter 2*. After a couple of hours practice, you'll be able to beat anybody when your skill is seven and theirs is zero. But working your way up through the levels until you're on zero and they're on seven will drive you mad with frustration.



These, presumably, are fans of the *Streetfighter* contest who disagree over the relative merits of their fave characters. So they've resorted to settling their dispute in the time-honoured manner of rumbling in a park.

A1200 VERSION – A FISTFIGHT AWAY

If you've got an A1200, forget it. Forget this version of *Streetfighter 2*, anyway, because it's one of those few games that doesn't work with the machine. But fret, worry and pine not. There's a special A1200 version being written at the moment. It's been reported as having 256 colours on screen, and the speed of a gazelle with a train to catch.

Streetfighter 2 A1200 version will be covered separately in *Amiga Format*, so watch out for that in the near future.

" It's the best beat-em-up on Amiga. Get it, get good at it and have a large amount of fun "

Summer fight city

Each player has his, her or its own special moves. Putting these in was a brilliant touch by CapCom, and it's what makes the game

PAIN AS AN ARTFORM



Chun Li is the fastest fighter of the eight. She's at her best in the air, where she can kick repeatedly, and even stamp on folks' heads. But her most lethal move is the 100-foot kick. This flashes out in front of her, and will cause repeated damage to any fool sad enough to wander into its range. Chun Li's weak point is her stunnability. Two or three good smacks will knock her out, allowing you to give her a serious shoeing.



Ken (and Ryu) can summon the forces of nature into a fireball, which, with a flick of the wrists, can be directed at the opponent. The recipient can either leap over it, block it or take it in the mush. Ken and Ryu also have the Dragon Punch, which protects them from the air. But their weakness is their mid-range. Most of the others can hurt them before Ken and Ryu can get close enough to do any damage back.



E Honda is tough, and he's got a wicked 100-hand slap. It's like Chun Li's foot thing, and woe betide any fool who gets in the way. The way to beat Honda is to take to the air and leap on him with a fusillade of kicks. Easily said, but our rubber chum, Dhalsim finds it difficult to bend his un-natural way around E's blubber, which causes all manner of problems. Luckily he can resort to using Yoga Noogies, a humorously vicious form of attack.



Zangief, the Russian meathead, gets a lucky hit on the best character, Blanka – best according to the unofficial *AF* opinion poll, that is. He's the only non-human, and he's as hard as nails (usually).

Blanka's over-developed arms have a serious reach. His claws also do a fair bit of damage. But his greatest trick is electrifying himself (which is too unpleasant to show here).



Normally, brawling at American military bases is frowned upon, but in the case of Ken and Ryu, an exception is clearly made. Here, Kenneth cruelly grasps Ryu's hair, and tugs gently.

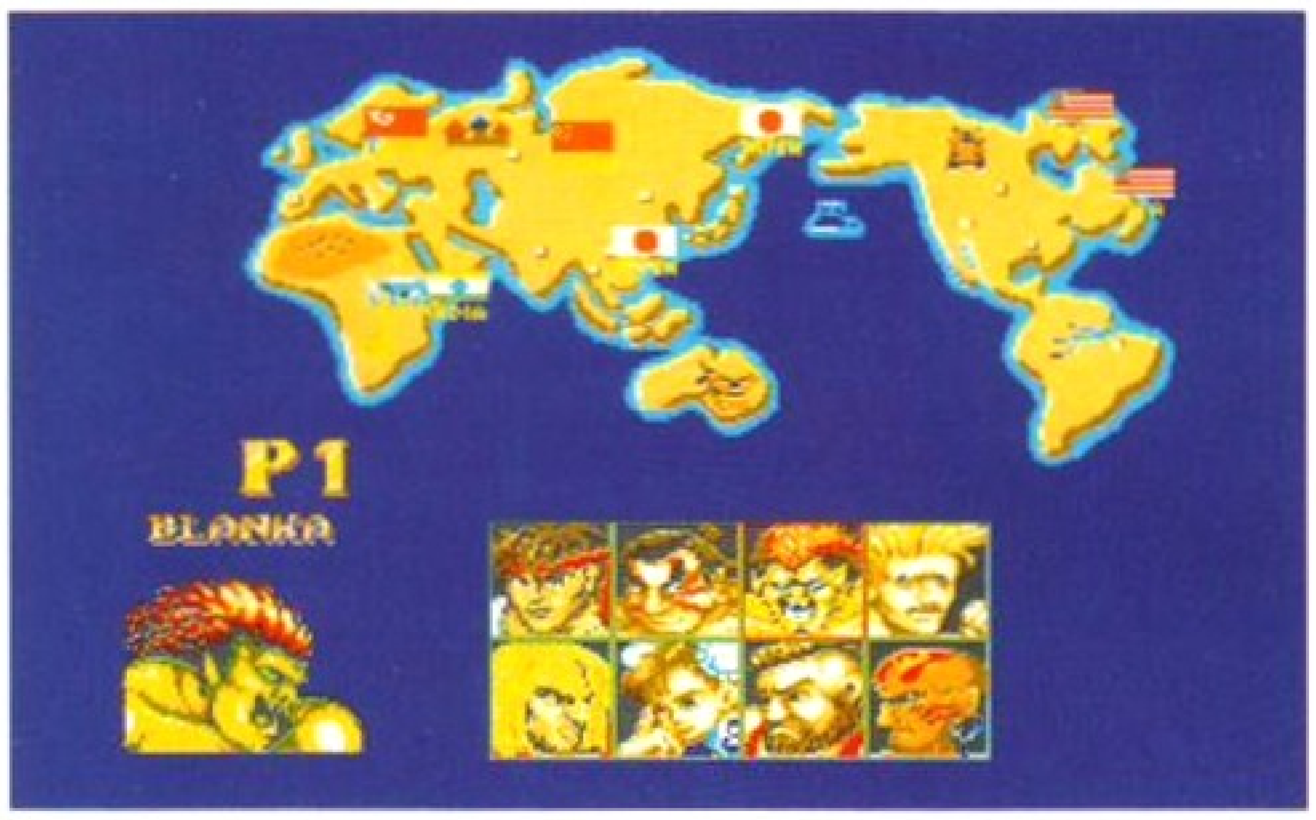


great. For example, Ryu and Ken blast firebolts, Blanka electrifies himself and Dhalsim indulges in a harmful spot of yoga flame.

Apart from the specials, each character fights in a different manner anyway. Some are better in the air, some are better at punching and some kick like the very devil. Their relative speeds vary as well. Chun Li is certainly the fastest, but is easily stunned. Zangief is slow but practically unstunnable. Blanka will happily chew your head and E Honda is offensively fat. The game is done in such a way so that every player is about equal overall, but vastly different in their specific characteristics.

Of course, if you like a fair fight, Ken and Ryu are similar. The only difference is that Ken sports blond locks, while Ryu is more of a dark horse, with an attractive headband. When it comes to fighting they're exactly the same. Both can do firebolts and hurricane kicks.

So what about the two-player mode? Well, with a couple of humans behind the joysticks (or Mega Drive joypads – see below), it's the best beat-em-up on the Amiga. The massive



The characters in all their glory, spread out over the world. Each has a story which explains why they're taking part in the Streetfighter 2 contest. But these are far too crap to go into detail here.

sprites, speed and endless variety all help, but there's something else. Something it's not easy to put your finger on. Something mysterious. (*Get on with it – Ed.*) An indefinable playability which keeps you and a chum there after the rest of the human race has gone to bed.

There are so many playing styles, techniques and touches that you only pick up once you've been playing a while. Some folk go for jabbing leg-kicks, others prefer flying punches and aerial assaults. You soon get to know your human opponents' little regular tricks, but it's the swines who vary their approach, drawing you into their lethal range before smacking your tiny head in, who are really annoying.

Does it wok?

Streetfighter 2 is a lot of fun, that much is certain. It looks nice and plays far better than it looks. There's so much in it that you can spend a long time just getting to know what's possible, and what the best moves are against certain attacks. Putting someone diminutive like Chun Li against a large person like Zangief can lead to the most dreadful of battles, with speed versus brawn being the crux.

The only thing wrong with it is that the sprites' huge size makes it a bit jerky at times. It's not too bad, but just enough to be noticeable, and to get a bit annoying after a prolonged playing session. People whiz around the screen very quickly, but there don't seem to be many updates as they do so.

So it only occasionally looks magic, the way they fly around. It's not a big point, but it does mean that *Streetfighter 2* doesn't quite earn a *Format* Gold. It's certainly the best fighting game on Amiga, and no mistake. Get it, get good at it and have a large amount of two-player fun.

James Leach

WILL YOU EVER REACH THE END EITHER?



This is the device they use for playing *Streetfighter 2* on Nintendo, you'll notice it has more buttons, but fear not...



...you won't have any problems playing with a joystick, because of some astute Amiga programming.

The Super Nintendo (whatever that is) has six buttons, as well as the directional control. Three buttons control the kicking (soft, medium and hard) and likewise, the other three control the punches.

The Amiga doesn't have this number of irritating clicky things on its joysticks, so how are the multitude of moves reproduced? Punches are done by pressing the fire-button, or moving towards the enemy and pressing fire, but kicks are controlled by pushing away from the enemy and hitting fire.

It works much better than you'd think and is only a problem for those who are used to playing the Super Nintendo version. So it isn't a problem for us normal folk at all, really.

If you want, though, you can even kick your kid brother off his Mega Drive and use the joypads from that. Now, of course, you get two fire-buttons; one for punching and one for kicking. It is better than a joystick, but if you swap between the equipment too much your playing skills will suffer.

Streetfighter 2
US Gold ■ £25.99

- Very impressive graphics. Great backdrops and massive sprites.
- Wide variety of players and skill-levels, with some seriously good opponents later in the one-player game.
- Lots of moves, blocks, counters and combat skills make the game different every time you play.
- Slightly jerky in places, which keeps the speed up but detracts from the gameplay.

Amiga Format Verdict **87%**

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It's all about leading a bunch of rats to their deaths at the hands of a major character from *The Simpsons,* with a hideous Rat-Krunch-Matic machine. What larks. What dead rats. What a great leap from Krusty!



As a clown, Krusty is well aware that the first rule of comedy is timing. So hit that lift now!



There are also laser-firing thingies that will bap our Krusty at every opportunity. Fun stuff.

Krusty's Super Fun House

Ask any *Simpsons* fan and they will tell you it's not just Bart, Lisa, Homer, Marge and Maggie (the main characters) that make the show worth going to a BSkyB-owning friend's house to watch. It's the subsidiary characters too; people like Itchy 'n' Scratchy, and Krusty the clown.

Well, now there's a game based on the latter character. *Krusty's Super Fun House* is a good-looking, nicely thought-out platform game which should be able to keep the most jaded of gamers on their toes for a while.

The first point to bear in mind here is that you should not judge the game by the ease of level one – and boy oh boy, is it easy. This is just a test level which gets you acclimatised to the control system and a few of the puzzles and tricks that will assault you in later levels.

In fact, the way in which the levels are set up is nicely thought-out too. You move Krusty about a few platforms, each of which contains a number of doors. Simply stand outside a door, soak in the strangely menacing music, press the fire-button and in you go to one of the sub-levels. Then all you have to do is to play a kind of reverse *Troddlers/Lemmings* in which you have to lead a bunch of rats to their deaths at the hands of a major *Simpsons* character. Like *Troddlers* you have to make use of blocks to achieve this aim. Unlike *Troddlers* you have to search for these blocks along your way – and this search becomes more difficult with the later levels.

" A Simpsons spin-off that looks excellent and has some neatly thought out levels too "

"Ha ha" said the clown

Killing the rodents is not the end of the level though. Once this is done, you have to search for some power-ups and hidden levels. Once all this is cleared up, you exit the level, and the door is locked behind you. Lock all the doors, and move up a level. "Easy! Ha, ha, ha!" Nope! Even though Krusty can leap twice his height and pick up loads of ammo, you will be foxed by the puzzles that build up and up.

The game looks excellent, there's some great use of colour and neatly designed levels, but it's let down by strange parallax scrolling and (once again, when will programmers get this right?) poor collision detection. Time and time again we see Krusty hanging off the last pixel of a platform; certainly he does a well-animated wobble as he hangs there, certainly he looks worried, but even more certainly he shouldn't be in the position in the first place.

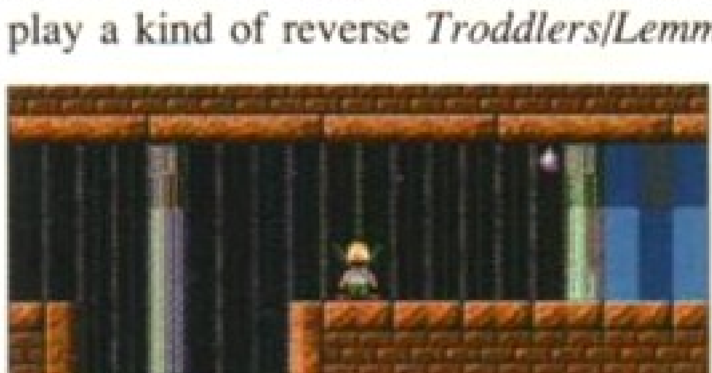
Despite the moans *Krusty's Super Fun House* is a mightily enjoyable piece of Amiga gameplay. Once you've got over the initial amazement that Krusty himself can outleap Bob Fosbury from a standing start, you will find yourself coming back for more and more.

Tim Smith

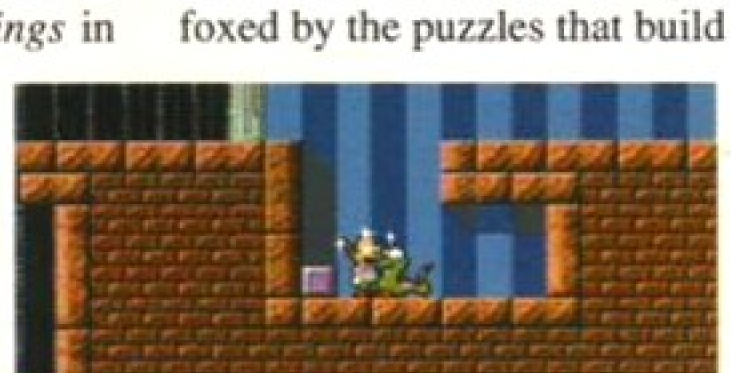
Krusty's Super Fun House
Accolade ■ £25.99

- Another decent off-shoot of *The Simpsons*!
- The in-game music is distinctly strange, almost worrying, which makes up for the lack of in-game sound effects.
- Graphically it's very, very impressive.
- Don't be fooled by the first level, it's very easy but it's only a teaser.
- Easy control method makes the puzzle-solving on later levels fun to do.

AMIGA FORMAT Verdict **85%**



The walls are sweating purple acid drops, the snakes are looking mean.



And Krusty is bog-all good with his Krusto-gun. All looks lost.



No! Krusty comes through with flying colours and then kicks a bag to death.



A typical scene from old London. As you wander the darkened streets, you spot a figure in the distance. Is it Jack the Ripper, or are you...?

Waxworks

Accolade ■ £34.99

You're fifth in the long line of twins and you've discovered, after your Uncle's death, that one twin has disappeared at four points in your family's history. Before he died your Uncle made a wax exhibit of the location where the four disappearances occurred, such as Ancient Egypt and 1888 London.

Each exhibit holds the key to a curse on your family, and you must enter into each waxwork and solve the four different mysteries. Each exhibit has excellent graphics, and the locations are viewed in a first-person perspective, 3D style. Interaction with the game's characters and puzzles is similar to that of a role-playing game, with objects to pick up and use and nasties to slay.

***Waxworks* is packed with atmosphere which is enhanced by wondrous graphics. Some of the scenes are quite gruesome, so think twice before buying it for kids, but for someone who's partial to a bit of schlock-horror it's not bad at all – if a tad overpriced.**

Andy Nuttall

Verdict 72%



Caveman Joe decides to carry out an impromptu dental inspection. Unfortunately Joe ends up being the filling.

Joe and Mac: Caveman Ninja

Elite ■ £24.99

Here's a prehistoric game in which you control one of two cavemen as they trudge their way through danger, chasing the kidnappers of their women-folk, pausing along the way only to club a few dinosaurs to death and adjust their trendy underwear.

Armed only with a trusty set of axes, your cavemen set off fighting their way through 13 levels of colourful, cartoon-style fun, murdering and maiming T-Rexes everywhere they go (and we wonder why dinosaurs became extinct).

With clear graphics and well-drawn backdrops the game almost stands off the screen. Unfortunately the game is a bit shallow, your cavemen amble along and the levels are linear and allow no exploration. These factors reduce the enjoyment value of the game and spoil an otherwise excellent product.

Dave Paget

Verdict 74%

Nick Faldo's Championship Golf

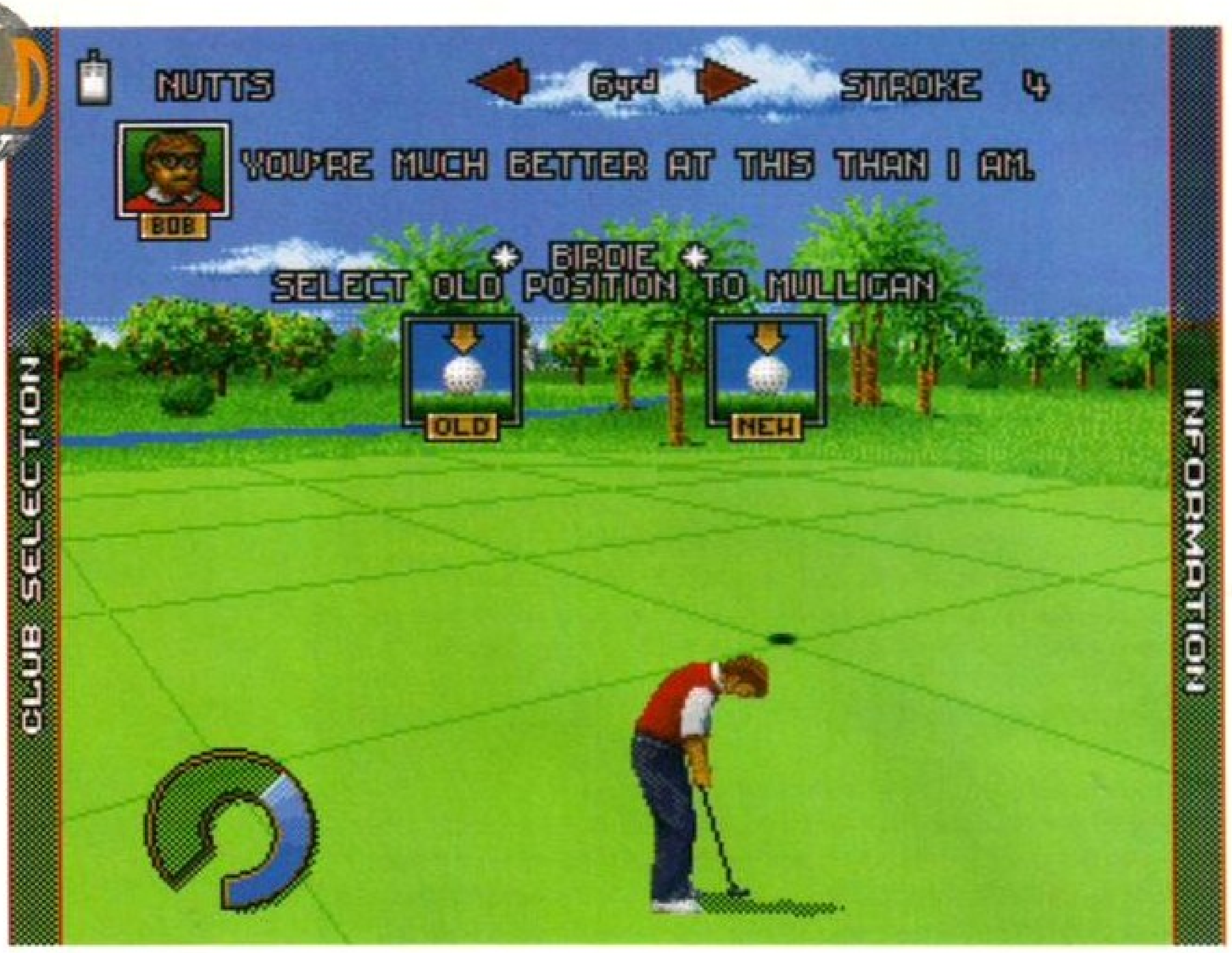
Since the release of Leaderboard, software companies have been striving to produce the ultimate computer golf game. Have Grandslam managed a hole in one this time?

Once again, as the great tradition of Amiga golf games continues, we are invited to tread the fairways courtesy of Grandslam, the company responsible for games like *Liverpool* and *England Football*. Those titles weren't exactly God's gift to Amiga games, so it came as a surprise to find that *Golf* is pretty good. In fact, it's very good.

Does it give good golf?

So, after *PGA Tour Golf* and *Links*, what can Grandslam come up with? The answer is a happy medium. *Links* is slow, but hardened golfers will play it for its sheer realism. *PGA Tour* is faster, but the graphics aren't great – still workable, but not stunning. *Nick Faldo's Faldo Golf* is fast *and* good-looking, although the graphics aren't as good as those in *Links*. Presentation is polished, with plenty of options available via the options screens. These make good use of colour and bas-relief (metallic 3-D effect), and are easy to use.

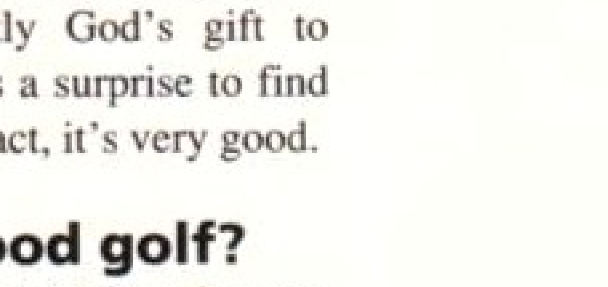
When playing the full game, there are two courses to choose from, which may be played using stroke or match-play rules. Space is provided for up to eight human players' names, while eight computer opponents are provided with varying skill levels. You can choose up to four of these 16 players to do the rounds.



Hooray! Nutts has scored a birdie! It's only on amateur mode, so it still gives you the 'Mulligan' option (so you can cheat by taking your last shot back and trying again), but the feat still stands!

TAKE YOUR SHOT HERE...

When hitting the ball, the white bar travels from left to right. Click once in the wrist snap area to add 10 per cent power to your shot, then double-click in the shot area to hit the ball straight.



Wrist snap area — Shot area

IF YOU FIND YOURSELF A BIT TEED OFF...

...simply read through these details to find out how to play.



Let's play a round

After player selections comes the club selection screen. Each human player must select a number of clubs (up to 13) from those available. A nice touch here is the skill meter next to each club, which shows how good a player is with that club. Although the levels are set randomly at first, they move depending on the player's skill – so if you play well with a 1-iron, the level will gradually rise for 1-iron as each shot is played. These player attributes may be saved along with other match data.

The first thing that hits you is the slick way everything fits together. The screens are easy on the eye – which is good because you don't have to look far to view the map, find your current lie, or any other information.

Once on the first tee, you will notice two shaded bars on the right and left-hand sides of the screen. Moving the pointer into these will bring up the menus. The first is the club selector, where you choose the club you want for your next shot; the second is a small map of the current hole, and all relevant positions of obstacles. Also, you can view the current lie of the ball, and the wind strength and direction.

Depending on the shot, you can adjust your stance to open or closed. This will help



This is the role-playing element of the game. As you play, the better you do with a particular club, the stronger you will be with it in future. Here, you can choose the stronger 13 clubs.

you get more swerve on the ball, or get underneath it for a chip shot. Taking the shot is simple to understand, but difficult to master.

If you selected Amateur play, not only are the clubs easier to use, but after each shot you are given the option of taking the shot again (Mulligan), or moving to the new ball position. This is great for beginners, because you can practice a difficult shot until you get it right.

Having mentioned the uppers, let's look at the downers – but they're only niggly criticisms. The first is that you can't quit from the options screens, so if you make a wrong selection – such as choosing one player instead of two – you have to choose your clubs and go into the game before pressing Escape to return to the original options.

> **" Faldo's presentation beats all other Amiga golf games "**

After you've zipped through the options and had a knock-around, you will probably turn to the training mode. This gives you a selection of shots to practice. As you successfully complete each shot you're presented with another, more difficult version – and Nick Faldo himself (well, a crude representation of his head) talks you through.

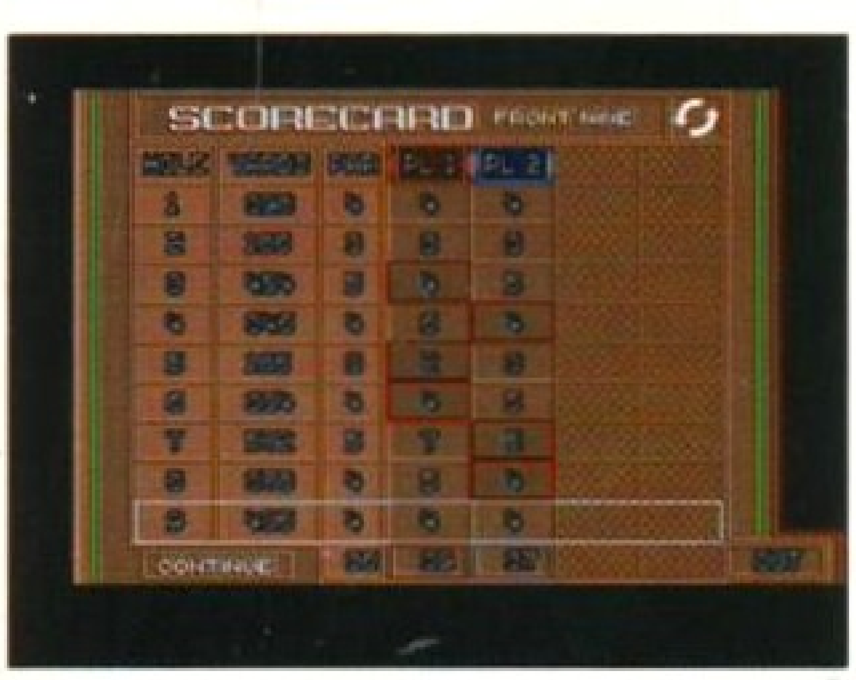
Although the trainer idea is good, there is one flaw. While Nick explains what you must do to complete the shot, he doesn't actually advise you on your mistakes. In the putting section, if you miss the hole, he says "Work your shoulders more." Now this doesn't really mean anything for two reasons: one, Nick offers this reply regardless of the direction or strength of your shot, and two, you have no option to "work your shoulders more" anyway.

This applies to the other training modes. A better idea would have been to store a few more phrases which could be used to actually help a player who has made a simple error, such as not correcting his stance or choosing the wrong club.

Finally, the gameplay is limited in that you can't look ahead to the position of your ball, so when you've made your shot you don't really know if it's good or not. This is an oversight, because it would have been simple to display the ball's position on the map.

Faldo, though, is both fun and playable. It's highly competent compared to other top Amiga golf games, it beats them as far as presentation is concerned and it has an excellent multi-player option. Playing a round with your friends has never been more addictive.

Andy Nuttall



Damn, I lost. I reckon it must be those double-bogeys on the 4th and 10th that did it...

Nick Faldo's Golf Grandslam ■ £34.99

- **Brilliantly slick presentation, backing up excellent graphics and good sound effects.**
- **Current skill levels with particular clubs may be saved to disk, and then reloaded at a later time.**
- **As quick as *PGA Tour*, with graphics that almost match those of *Links*.**

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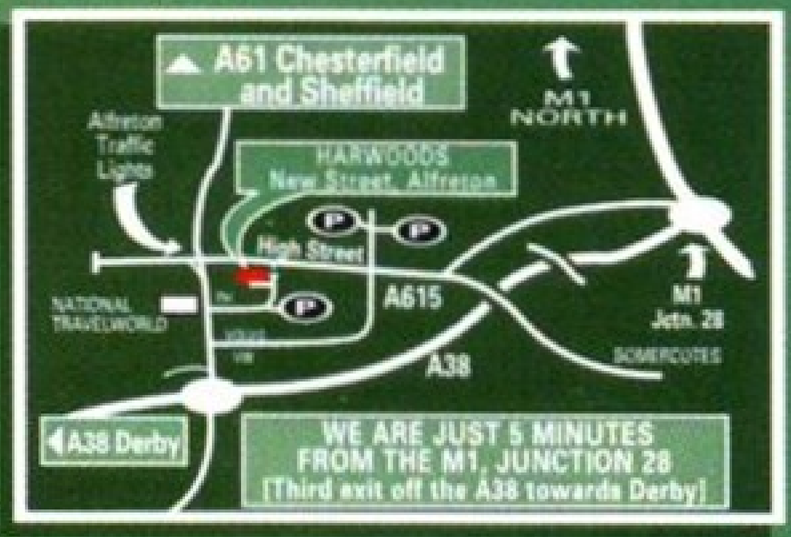
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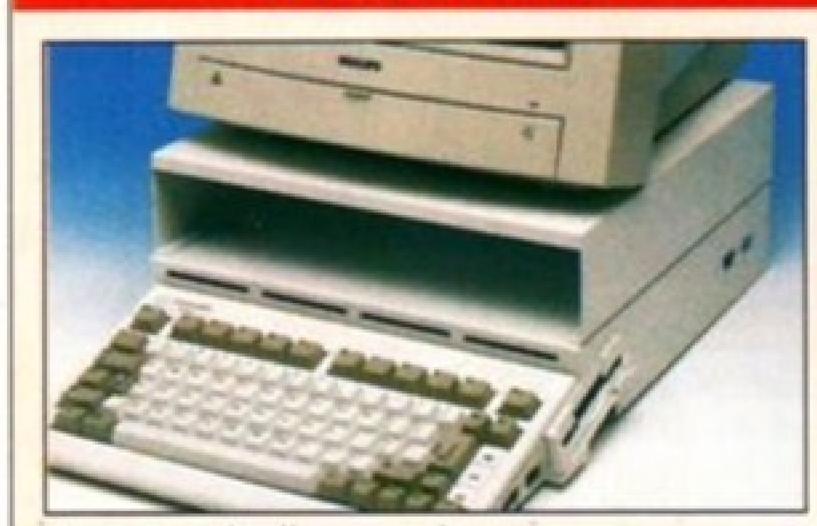
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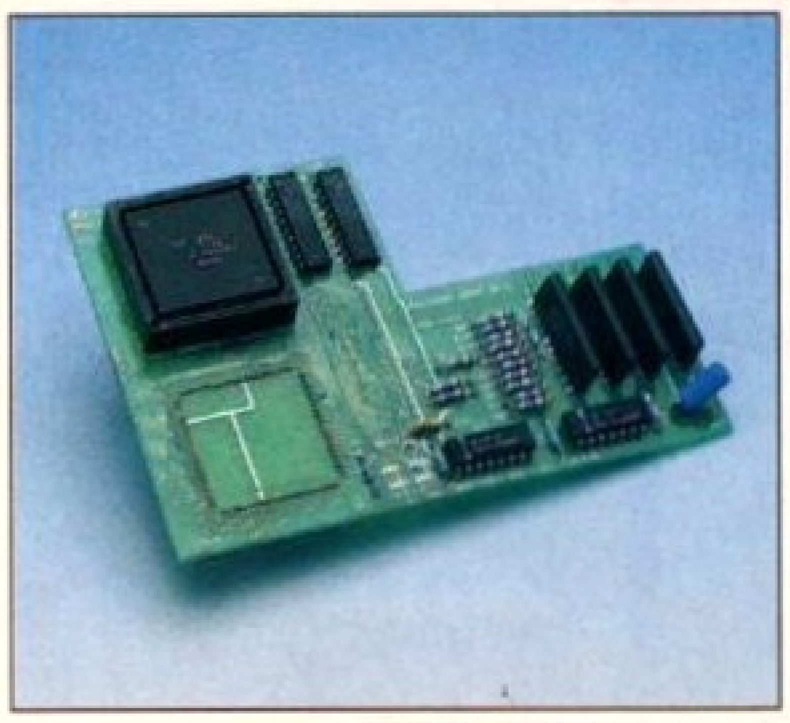


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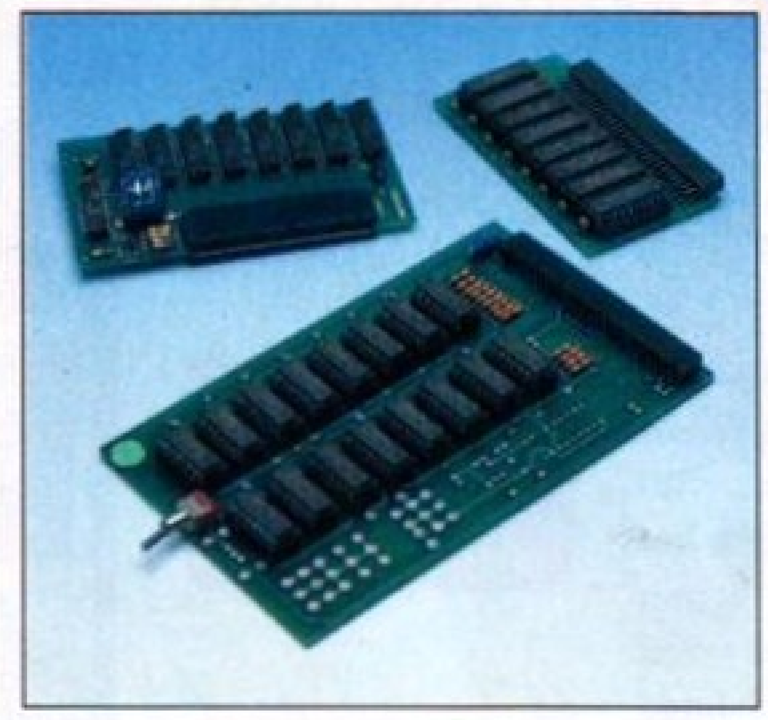
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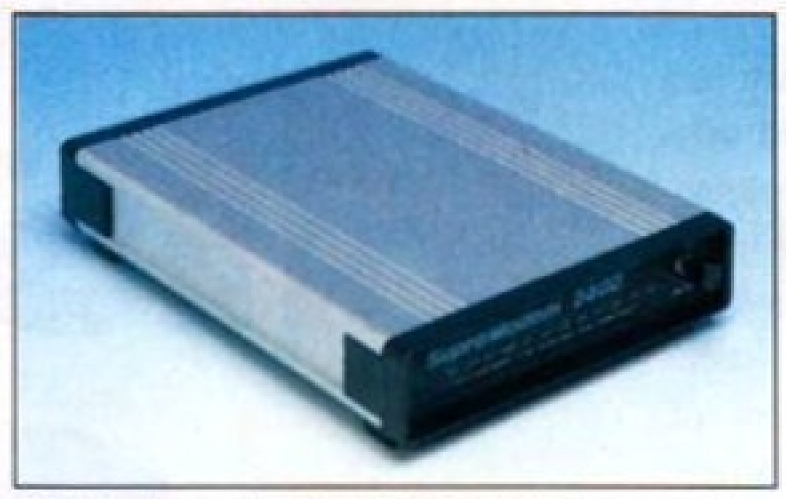
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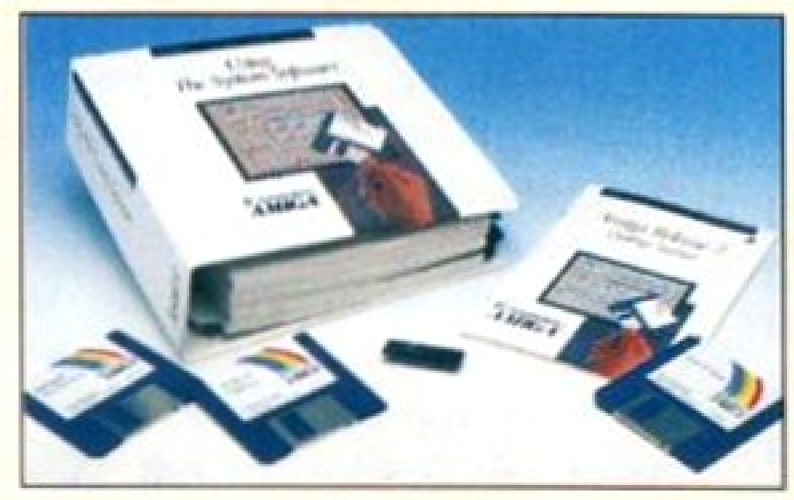
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War in Europe is what everybody fears most, and making a game of it could be considered tasteless. But Blue Byte add a bit of history to make their Great War a real thought-provoker.



The event that threw Europe into four years of miserable war: the assassination of ArchDuke Franz Ferdinand in Serbia, 1914. Blue Byte's *HistoryLine* is an animated lecture as well as a stunning game.

HistoryLine 1914-1918



The last people on earth you'd expect to be doing a game about the First World War are, let's face it, Germans. But those brave guys at Blue Byte, the small but perfectly-formed software house from Dusseldorf, have done just that. They've taken the bare bones of their earlier, much-acclaimed game *Battle Isle*, added a vast amount of historical background and detailed WW1 tactics, and produced what is probably the best strategy wargame we've ever seen.

HistoryLine 1914-1918 begins with an impressive 'from-the-trenches' animation of a night battle, and then moves on to a longer, even more detailed animation of the murder of Archduke Franz Ferdinand, the heir to the Austro-Hungarian throne. This was the flame which set alight the tinder-dry tempers of Europe. A detailed account of the many treaties, war preparations and pacts which led up to this moment follows in another animated sequence. The end result, as our grandfathers knew to their cost, was four years of the bloodiest war this world has ever seen.

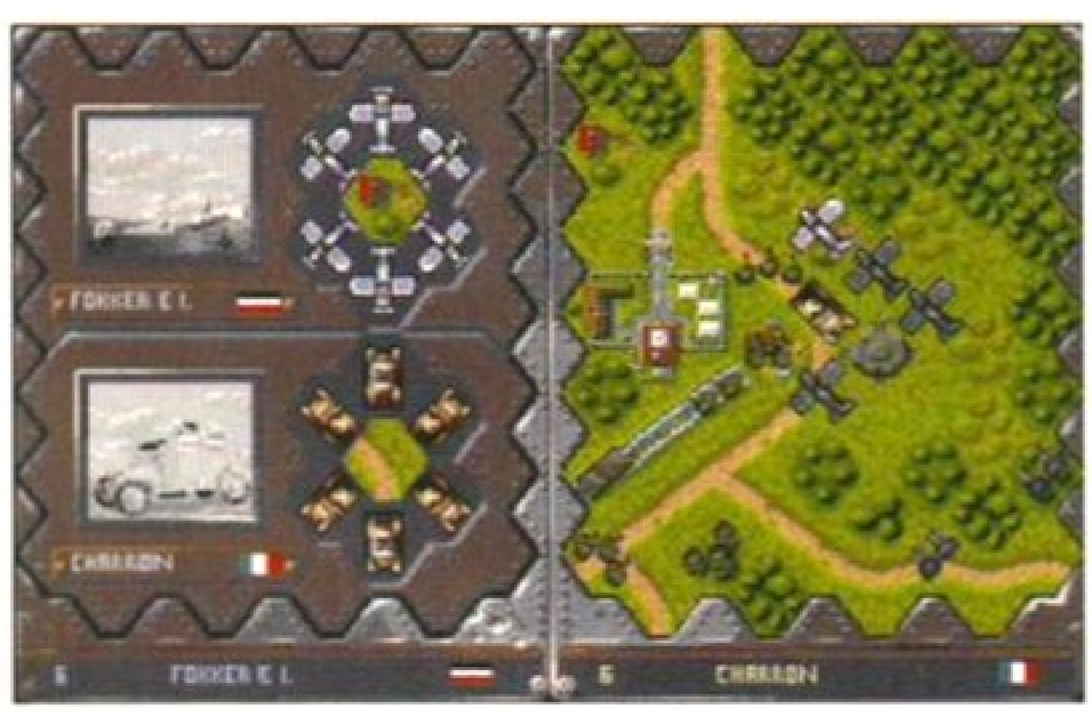
Once you've made it past the enthralling intro sequences and the hairs on the back of your neck have relaxed again, you find yourself at the main menu. This is where *HistoryLine* can be altered according to taste. You can opt for one-player battles against the computer (you choose whether to control the Germans or the French), or two-player head-to-head battles.

You can set the game so that individual battles are resolved using animations, or just a quick calculation and a result. This is ideal if you're running the game from floppy and the disk-access is too much – but it's worth checking over the battles at least once or twice. Better still, install *HistoryLine* to hard drive.

HistoryLine is very intuitive and very, very playable. *Battle Isle* owners will already be familiar with the way *HistoryLine* works, and newcomers will find it just as satisfying. *HistoryLine* uses a view very similar to the one featured in *Battle Isle*, and many of the controls are the same. The main difference is in the graphics and tactics, both of which are much-improved and even more detailed. The game takes place in two phases: movement and fire. While player one is moving, player two (or the computer) is firing or using units, and when each player has finished, any battles and conflicts are resolved using the battle animations. When that's done, the players swap actions, and the whole thing repeats.



All actions can be controlled using either joystick, mouse or keys, depending on the way you set up the main menu, though joystick control is probably the easiest. To move units or examine them, you move the cursor over their position, hold down fire, and move the joystick in one of four directions. This changes the cursor into a different icon, depending on the direction and the current turn phase.



As you go into battle, you can double-check the strength and power of the units you're bringing to bear on the enemy.



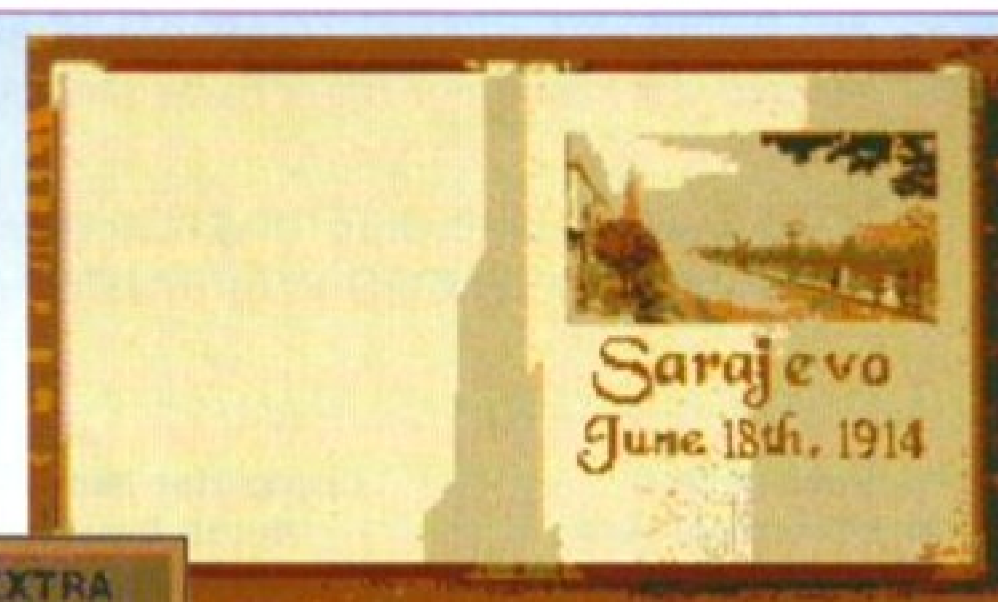
HistoryLine takes you through the whole bloody war – and winter campaigns are a lot harder than those in the summer.

DON'T MENTION THE WAR

Blue Byte's head man, ex-programmer Thomas Hertzler, was the visionary behind the *HistoryLine 1914-18* project. He's quick to point out that the point of the game is not to glorify war, but to present the important facts about why they start.

According to Thomas, Germans especially don't like talking about the giant conflicts they've managed to get themselves into – and you'd be considered a bit militaristic if you were overheard discussing the Somme in the local Bierkeller. The constant supression of the past and the denial of the facts was something Thomas felt was unhealthy, and potentially dangerous.

"If everyone tries so hard to deny that what happened, happened, we'll be too slow to realise if it looks like happening again. The healthy way is to talk about it, accept it and perhaps understand it a bit more. Maybe then we'll all be a lot safer." Sound sentiments, and ones which have resulted in one of the most well-polished, beautifully presented and playable games this year.




The New York Times. EXTRA
LUSITANIA SUNK BY A SUBMARINE, PROBABLY 1,260 DEAD; TWICE TORPEDOED OFF IRISH COAST; SINKS IN 15 MINUTES.

Details, details: lovely touches like the turning pages of history in the intro and newspaper headlines bring the history to life.



You can examine units in detail to find out their movement rates, fire-range and armour strength. This display also shows a small digitised photo of the original WW1 unit in action, which really sets the atmosphere. Gone are the fantasy sci-fi craft of *Battle Isle*. Instead you're dealing with real history, real technology, and real, fragile people.

A map of the playing area can be called up in the same way. It shows the main depots, factories and headquarters of each of the warring sides. You can check out the overall status of the current campaign and use it to zoom in a specific areas of interest.

Moving units around is easy – you just select the icon shaped like a cross, and this highlights all the spaces where your current unit may move to. Next you position the cursor on the space of your choice, and hit the button again. This highlights the route your unit will take, giving you the chance to reject it if, for example, it would take you into range of an enemy gun. When you've decided on your movement, you just click again, and the unit trundles along to the chosen space. You do this with all the units you wish to move, and then select the swap icon. As soon as your opponent has finished his firing phase, he'll select the same icon, and then you just press the F1 function key to switch over.

Strategy games are usually accepted as being boring and text-heavy, but *HistoryLine* uses excitement and animation instead.

On the fire phase, things are even simpler. You can go through each unit, using the fist icon to check whether there are any targets in range. Most units can only fire when they are directly adjacent to an enemy unit, but there are some pretty deadly artillery batteries which have a range of up to seven spaces. Other functions can also be carried out during the fire phase, depending on the unit type. Pioneers can be made to dig trenches, and bases can be made to repair damaged units or build new ones, providing you have the energy available.

" It'll make you think, curse and swear, and breathe plenty of sighs of relief, all in one sitting "

The core of the game lies in the way you play it – choosing your strategies, blocking your opponents, and trying hard to win battles without destroying all your units in the process. The more they fight, the better they get, and you really get to appreciate what it's like to lose good men in an appalling battle. *HistoryLine 1914-1918* is a stunner of a wargame, and nothing like the 'specialist interest' sort of affair we normally associate with wargames. It's got masses of appeal, and it should appeal to the masses, even though it's about a particularly miserable portion of 20th century history.

It'll make you think, curse and swear, and breathe plenty of sighs of relief, in one sitting. With first-class animations and wonderfully detailed accounts adding plenty of atmosphere and flavour, you may find you learn a few things. Even if you don't, it's still an unmissable game that's destined to become a classic.

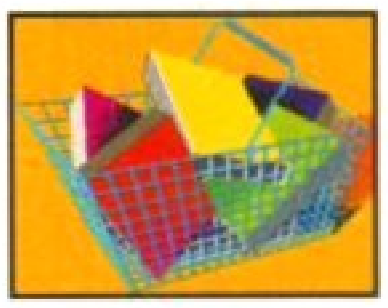
Neil Jackson

HistoryLine 1914 - 1918
Blue Byte ■ £34.99

- A truly brilliant wargame, the like of which we've rarely seen.
- Moody soundtrack, classic animation, and a belter of a game to boot.
- If you can handle chess, *HistoryLine* is a better, 20th Century equivalent.
- Lastability, addictiveness, and mind-bogglingly detailed – it's a winner!
- Chilling and thrilling – don't miss it!

AMIGA GOLD FORMAT **94%**





It's compilations time folks, with five collections at that bargain-basement price. **Andy Nuttall** wades through and sorts the Ben Eltons from the Bernard Mannings...

Cheap 'n' Cheerful

Bignose the Caveman

CDS ■ £7.99



Bignose reacts to the marauding 'saurus by beating himself around the head...

Aha! At last a game is released which has outsize olfactory regions as its main theme. Fans of Karl Malden will be really happy, because they now have another possible role model in the shape of Bignose, the star of the game. Unfortunately, though, the game is only likely to appeal to the younger generation (who probably won't even know who Mr Malden is any-way). Still, that's life, eh?

Bignose the Caveman is a game of the usual scrolly-runabout-collect-goodies-kill-baddies genre, but unfortunately it's nothing special. As you would expect the characters are cute and quite large, the music is quite jolly, as are the sound effects, but the gameplay is sadly lacking.

There are plenty of creatures to bash over the head with your club, ranging in size from snakes to dinosaurs, so it's exciting from that point of view. Along the way there are other objects either to collect or bash, and small rocks to pick up which you can use to knock out the larger enemies (such as the brontosaurus in the picture above).

Sometimes it can get a bit annoying, though. For a start it's all too easy to mistime your bash, and end up dead yourself. Jumping over holes is also difficult, because if you jump too near the hole you will end up plunging to your death – and with only three lives, this isn't funny.

OK, it's fun for a short while, and it's more than likely to keep your kiddies amused (and quiet) for a few weeks. And it's only eight quid. Nuff said.

Verdict 65%

Super All-Stars

Codemasters ■ £25.99

Steg The Slug



Steg's family aren't looking particularly healthy – call the Social Services...

Eleven levels of platform action which pits Steg against all manner of enemies. None of which, curiously, include table salt. Anyway, this is one of the Codey's finest and most original, erm, platform games.

Magicland Dizzy

Dizzy is an egg with several appendages which enable him to walk and hold things. Lucky, because otherwise this would be a bit boring. As it is, it's a playable, eggy platformer with cute graphics.

Captain Dynamo

Geriatric fun courtesy of the Captain: leap up levels, collect diamonds and avoid booby traps – was reviewed in Cheap 'n' Cheerful in Issue 40.

CJ In The USA

This is a cute little game, with a tiny elephant for a lead character and many horrid enemies including pit bulls and the Ku Klux Klan. This is another cutesy, nicely executed unoriginal platformer – which was also reviewed in Cheap 'n' Cheerful in Issue 40.

Robin Hood Legend Quest

A curious game for the Codeys, in that it doesn't involve a small, cute character. Instead you control Robin Hood who, instead of robbing the rich and giving to the poor, jumps up and down levels all day. Poor scrolling and reasonable gameplay.

Verdict 75%

TV Sports Boxing

Mindscape ■ £14.99



Jon, alias Stuart from *Amiga Power*, lets his guard drop for a split second...

Don't worry, this isn't a 'Messrs Carpenter and Bruno engaged in some chirpy repartee' licence – though at least you might have gained some pleasure out of this bout of boxing if it were.

You have to create a boxer by selecting his physical appearance, style and attributes, and then introduce him to the ring where he'll promptly be killed by some big brute with no brain. Be prepared – however good you think you've made your boxer he'll always get maimed.

The fight begins with an overhead view of the ring, with the two boxers circling each other. As the boxers draw closer together the view switches to a side-on view. Here, your boxer has a hard time touching even the worst opponent, and even when contact is made your boxer makes a far smaller impression than the computer's does.

Although it's well produced (as with all *TV Sports* products) and features some excellent graphics and sound, this isn't a very good game at all. OK, it does have its good points, but the negative aspects of the game far outweigh them. Anyone who does want to get hold of a decent boxing game should try out *4D Sports Boxing* which received a hefty 79 per cent in Issue 30.

Verdict 46%

TV Sports Baseball

Mindscape ■ £14.99



While nobody's looking, Carl attempts to sneak to third base...

Do you remember Accolade's *Hardball* on the C64? Well, Mindscape are attempting to prove that game technology hasn't moved on at all in the last five years with the release of their *TV Sports* version of the game on their budget label.

Played in a very similar fashion to the aforementioned game, *Baseball* puts you in control of a team from the American leagues, competing in a stadium of your choice. The decor of the stadia doesn't really affect the game of course, but frivolous additions such as this are necessary to show that the Amiga is being used to at least 10 per cent of its full potential.

As it stands, the game isn't that bad at all. The problem is there just isn't enough fun involved in playing it. Control the batting team for a while, and hope that luck's on your side so that you can hit the ball; then move into fielding (where you have a bit more input to the game), and throw the ball around each of your players for a while. Much like *Hardball*, this is fun for a short while when you play against the computer. Competing with a human the fun will last longer as you attempt to make your opponent drop the ball more times than you do. Nice graphics, shame about the playability.

Verdict 65%

Super Fighter

Ocean ■ £25.99

Pitfighter



West-Side-Story-a-go-go! Just look at that really interesting, er, TV screen...(?)

You control a character who fights in a pit (hence the name), participating in a vicious scrap to the death with your Amiga to see who goes to that great big pit in the sky first. The game consists of some dodgy, jerkily animated fighters wibbling around the screen, wiggling their bums and strutting their trussed-up stuff to the rhythms of an early Eighties-style dance soundtrack.

A crowd of grey-looking people stand around attempting to bait the fighters, but they just look like extras from *West Side Story*. They are animated, but unfortunately they don't change their direction at all – so regardless of where the fight's going on the crowd will always face the same way. This gives the impression they're watching some imaginary fight elsewhere on the screen.

As you walk around, the characters are vertically scaled depending on their position – they get taller as they move nearer the screen. This would be a good feature, except that they look too stretched at the closest point. The only saving grace in the whole game is that there are lots of moves available, so you won't find yourself short of things to do – for the five minutes that you keep the game running, that is.

Final Fight



Cody, having dumped Josh and Todd, prepares for the men-without-brains...

Here's a scrolling beat-em-up which takes place over several areas of downtown Metro City. You take control of Guy, Cody or Haggar, who are a gang of rather large, reasonably well-animated characters intent on finding the evil kidnappers of Haggar's daughter.

As you could probably guess from the accompanying picture, the streets that lie between you and said kidnappers are not peopled with flower-carrying, love-bringing peacemakers. No, all manner of twisted, bitter individuals with steroid-induced biceps and hands that wouldn't look out of place digging up earth on an allotment lie in wait for you to come trundling along.

On your travels through the many scenes, you will find yourself confronted with various enemies from the Mad Gear gang. These include large men who body-check you to the ground, and an American car which sits there threateningly while you smash it up – a similar scene is featured in the later *Streetfighter 2* (see the full review on Page 82).

All in all, not a bad beat-em-up – especially in two-player mode – and the saving grace of this compilation.

Verdict 46%

WWF Wrestlemania



Ultimate Hero goes for Hulk's throat – more power to him, I say...

This game is featured in both the *Super Fighter* and *The Dream Team* compilations so it's bound to be good, isn't it? Well, not exactly. It's not bad compared to *WWF 2* (see Page 64), but it's still not inspiring.

I find the whole concept of WWF a wee bit tedious anyway. Take a few sweaty, overweight individuals with marginal acting ability, stir in some horrible Americanisms, and what's left leaves a bad taste in my mouth.

Even at the start of the game, when you get to choose your character, the American touches immediately appear. Your opponent offers up some throwaway comment such as "You may be big, you may be strong, you may look good, but you just ain't perfect", and you have this uncontrollable urge to scream "Bog off you unimaginative knobwit". Unfortunately, though, that reply isn't one of the available options.

Once you're into the game itself (if you last through the preliminaries long enough without throwing the 'Off' switch), you are presented with the bout between you and the first of five opponents. This involves a couple of large sprites mincing about in a ring, each trying to pin the other to the floor. A reasonable repertoire of moves is available, from leaping off the corners to picking up the chair and hitting your opponent with it, but not enough to save the game from festering in the back of your cupboard after a couple of plays. Ocean's move of including this in two different compilations is just taking hype to an ultimate low.

The Dream Team

Ocean ■ £25.99

The Simpsons: Bart vs The Space Mutants



Bart prepares to spray all those nasty purplies a delicate shade of red...

This scrolling platform game, which came free with A500 Plus bundles last year, has proved to be incredibly popular with the younger Amiga owners. The scenario is not unlike many a computer game plot: the Earth has been invaded by horrible purple aliens who are hell-bent on taking over, and Bart has to do all that his little yellow bod can muster to stop them.

After the excellent cartoon-like introduction which explains what's going on in true *Simpsons* style, you must guide Bart through five long levels, dodging the aliens and preventing them from reaching the ingredients they require for their Ultimate Weapon. To help you get by, you can collect various implements on the way, such as a spray to change the colour of purple items so that the aliens can't collect them, and a slingshot you can use to shoot balloons for bonuses.

As well as being a reasonable arcade game, a certain amount of thought is necessary in order to complete the puzzles involved. A good game, appealing to the youngsters, and complex enough to keep the more mature gamer amused for a while.

Terminator 2



Match the two sliding block puzzles to cause the fingers to waggle...

Like *The Simpsons*, this has an excellent film-style introduction which sets a good atmosphere for the game, playing an excellent soundtrack while showing digitised graphics from the trailers for the film.

The game itself is split into eight different sections. The first is a head-to-head beat-em-up where Arnie (you) takes on the T-1000 in an *International Karate*-type scene. You also have a gun to hand as well, which comes in useful for putting the wind up your opponent. Next up comes a *Major Motion*-style level, with Arnie trying to negotiate his way through a vertically scrolling landscape. This is made even more difficult by the fact that the T-1000 is chasing him in a large truck – one of the token scenes from the film.

Possibly the best level, though, shows Arnie's arm with the fingers connected to the wrist via a small sliding-block puzzle. The puzzle must be completed within a set time limit to receive a bonus. As each link is made, the relevant finger wiggles realistically – a nice touch.

Terminator 2 takes its ideas from other games so it is fairly unoriginal, but it has enough variety for the wee 'uns.

Verdict 70%

Strategy Masters

UBI Soft ■ £32.99

Spirit of Excalibur



The Knights of the Square Table prepare to do battle...

This is set in England in the year 539, Arthur has been defeated and you play his successor who must defend the realm from marauders.

The game has a *Populous* look, with a map of Britain showing castles and other landmarks. The map may be scrolled to show the rest of the landscape. Reasonable enough game, similar in style to *Defender of the Crown*, which will keep strategy heads happy for hours.

Battle Master



Water repels these green thingummies, but unfortunately not their arrows.

Another strategy game that has some role-playing elements thrown in. Use the mouse to control a small party of characters, each with a role similar to AD&D style games..

Although the sprites are small, and slightly wobbly, the game works well. There's a scrolling landscape through which you can move your characters and info about the current party. A bit dated now but compares favourably with even the latest in the *Ultima* series.

Hunter



Either that's an incredibly large bull, or the 3D scale is a little off...

If you've played Virtuality arcade games, you'll know what to expect from this game. The main view is a 3D polygon world through which you must guide your man through several missions. To help him get around no less than 15 vehicles are provided. These are realistically drawn, and have the correct 'feel' as you drive or pilot them. As well as the graphics and playability, the adventure elements are rather good too. Well worth a look.

Chessplayer 2150

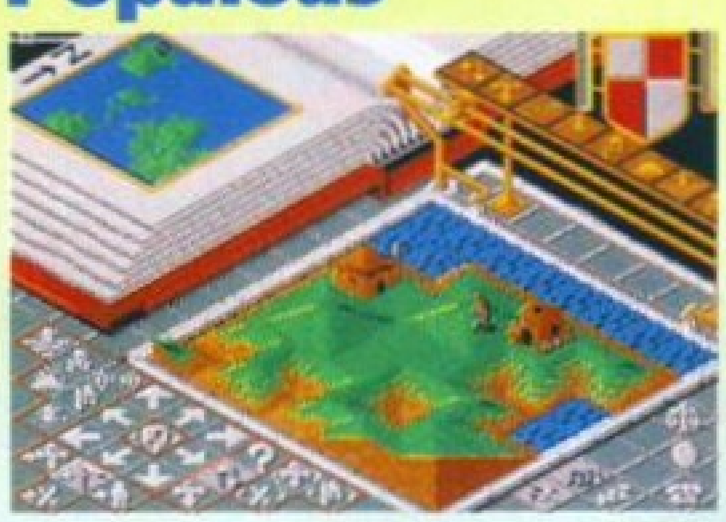


Rumour has it that these innocent-looking teddies are involved in a pawn ring.

Five levels of difficulty are on offer, plus a 'learning' option which enables the computer to analyse a game, and learn the moves it considers to be good. So if you're a Grand Master, switch learning on and your opponent's 'intelligence' will grow. Also available are computer vs. computer and human vs human modes.

Verdict 76%

Populous



Mavis sneaks stealthily back to her husband, asleep in a nearby hut...

The original god game on the Amiga, and still considered one of the best even though it was updated with the release of *Populous 2* about a year ago. Because of this, UBI Soft have seen fit to include the game on both the *Strategy Masters* and *Fantasy Worlds* compilations featured here.

If you don't know the concept of *Populous* already, you play one of several god-type figures whose aim is to win over the population of an island by being good to them. Destroy their enemies, level the land and create new leaders – basically, do everything a good god would do – but always remember that on the next island a rival god is doing a similar thing. It's both a power struggle and a race against time, and only the fittest will survive.

The more popularity you can gain with your people, the more powerful your powers will be. As you gain in strength you will be able to wreak all sorts of mayhem and havoc. Cause floods, earthquakes and battles in neighbouring islands to try to wipe out their population and so beat the other gods into a hollow shell.

The game is represented in isometric 3D and is icon-driven. The main play area is set in the middle of the screen, and this may be scrolled using the set of direction icons on the left side of the screen. Play is represented by tiny, but well-drawn graphics in the landscape. Although it looks a little dated compared to later games such as *Mega-Lo-Mania* and *Populous 2*, it's still very playable and an excellent addition to both of these collections.

Fantastic Worlds

UBI Soft ■ £35.99

Mega-lo-Mania

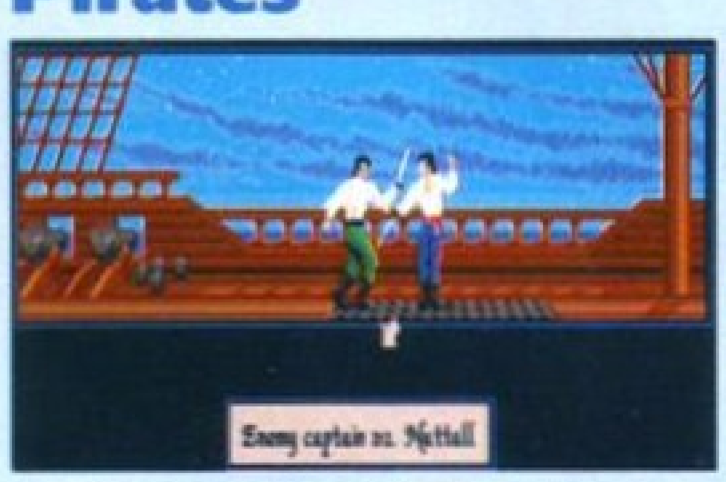


It's not easy being a god when your land is entirely populated by trees...

In a similar vein to *Populous*, but you're in charge of a race of people. You must speed up their technical development so that they can take over the other islands. Leave them alone and they will reproduce and evolve, but make them go out and discover new minerals and they will make umpteen scientific discoveries.

The game is finely balanced between strategy and arcade styles, featuring superb graphics and excellent sound effects.

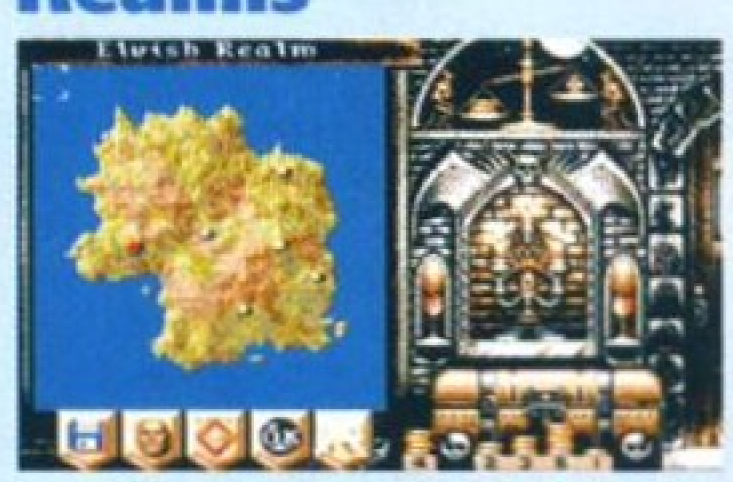
Pirates



Yoo-hoo! Don't look down now, but your flies are undone!

An adventure/strategy game where you sail the world, seeking and destroying ships and towns. If you encounter a ship you must engage in combat. If you win you either sink the ship or set it up with your own crew, creating a mini fleet of your own. The graphics are a little dated, as is the sound, but the gameplay is still addictive – proving that if a game plays well, no matter how rusty-looking it is, people will still be playing it for years to come.

Realms

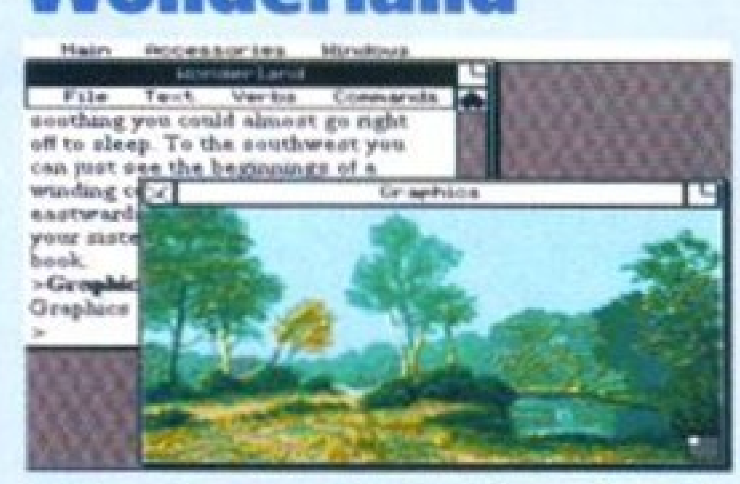


Urrrgh! That wall's getting a bit mouldy. Oh no, it's the game map. I see.

Here the aim is to become ruler of eight mythical worlds (though they do resemble Earth). You begin as leader of a single empire and you must tend to your area while plotting to take over the other empires.

The overall game looks similar to *Populous*, but the graphics used to describe the people and cities are just too small to be realistic or cute. Overall, though, it's not a bad game, and great if you fancy a kind of city manager/war gamer-type scenario.

Wonderland



Pretty pictures and animations abound in *Wonderland*.

Based on Lewis Carroll's story *Alice In Wonderland*, the game casts you as Alice and most other characters in the book show up at some point.

The excellent story is backed up by nice still graphics and small animations. It can be played in low, medium or high-resolution modes. Worth it for Alice fans.

Verdict 82%

Alien Breed Special Edition

Team 17 ■ £10.99



"Shoot, shoot, and then shoot again! Wow, this Marine life can be really fulfilling sometimes." An Alien snuffs it as the guy with the gun looses off another round.

Imagine the scenario: a pair of tough-guy marines wandering about a lonely spacecraft inhabited solely by horrid aliens. Throw in a couple of machine guns, the odd computer or two, and what do you get?

Well, in this particular case you get *Alien Breed '92*, which is an improvement on the original *Alien Breed* game that was released in late 1991. Based loosely on the *Aliens* film theme, the game is in the out-and-out blast-em-out-of-existence genre, with superb 50Hz scrolling backgrounds, well-animated sprites and some incredibly effective sound effects – including quite a lot of speech.

Your job is to complete several missions, one on each level of the game, such as shooting the four power domes and escaping before the ship is nuked – all pretty good stuff that really gets your adrenaline pumping.

As you rush around the levels, which are very similar in style to Graftgold's *Paradroid '90* in that they are viewed from above, you will find loads of useful items. Keys to open doors (or you can just be darned reckless and blast them open), ammunition for your guns and money in the form of 100 or 1,000 credit bills. Also dotted around the levels are computers which you can log into to gain information or buy new items.

A map of the current level is obtainable, as is loads of new hardware such as guns, lasers, flamethrowers and various tools to get you out of this blast-em-with-anything-you've got-em-up. These generally weigh in at a large number of credits, though, so it's a good idea to build up a good wallet-ful so that you can go for the more effective firepower.

If you've managed to play the original *Alien Breed*, then you're not likely to be stunned by the additional features of the new version – except for the extra levels (double the original amount) they are quite subtle. As well as ironing out the flaws in the original, the authors have made the aliens tougher, improved the storyline, tweaked the game maps and included a password system so that you can return to the level you were just killed on (which is a useful feature, believe me).

One thing they haven't got around to doing, however, is changing the proximity-detection of doors. If you find a narrow corridor with two doors on either side, you can't get past without opening at least one of them – because the program detects your position, not your direction. Still, this is only a minor niggle.

For those of you who haven't played the original, and if you enjoy a good shoot-em-up, they don't come much better than this. If you do already have the game, I would still advise you to think seriously about getting this version – it really is quite a lot better, and really a snip at only 11 quid. Buy it now or buy it later.

Verdict 87%

Raving Mad

US Gold ■ £25.99

Rodland



Cutey Tam prepares to perform another Karate move on an unsuspecting enemy.

With 44 levels of action, *Rodland* proved to be a gem of a game in the arcades. This conversion remains true to the original, and even goes so far as to add in some features. Using the popular screen-by-screen approach, as used by *Bubble Bobble* and many others, *Rodland* offers up Tam and Rit as the two main characters. As you may have guessed, the two stars are very cute-looking, as are the rest of the graphics, with even the most vicious of monsters depicted as a fluffy pet thingy.

Each level has lots of goodies to pick up, hazards to dodge and Tam has an excellent way of knocking the baddies into a cocked hat for a bonus. Playable, addictive and attractive.

James Pond – Robocod



James with his amazing expand-o-suit leaps and bounds between platforms...

Although the original *James Pond* game was merely a platformer, this sequel is more of a console-style game in which you run and jump about multi-scrolling levels, and dodge some cute, smiling baddies. Wearing a specially designed suit, which enables James to become like Stretch Armstrong or retreat into his body armour at will, you must traverse the levels to finally defeat the evil Dr Maybe.

Beware, though, if you don't have a sense of humour (not that you're likely to admit this) – *Robocod* is packed with some of the most atrociously groan-worthy fish-type puns you're ever likely to see in an Amiga game. Cod they were awful.

If you're a fan of arcade games, and you haven't got a copy of *Robocod* yet, then you're either in prison or seriously deranged (or maybe both). In most people's carefully considered opinion, this is one of the best games of all time – and this still stands now, a year after its original release.

Mega Twins



Not as fluffy wuffy, cutesy wutesy as the other two in the pack.

In almost all multi-game compilations there has to be at least one bogey, and – sadly – the one in this case has to be *Mega Twins*. You can see why it's included, though – because it's yet another game where you have to run across platforms and collect things, while bashing cute-nasties with your sword. In the playability stakes it's not that bad; and although it's got the cutesy graphics that the rest of the pack have, it just doesn't make the grade that is set by the other two games in the collection. There isn't much of a hook to get you interested, and once you do work up some enthusiasm, it'll soon evaporate.

OK, so it's not a game to buy on its own, but it does make a nice addition to the pack, and you will find yourself coming back to it from time to time.

By the way...

This pack comes with a free Kixx game – in our case it's *Action Fighter*. Remember the age-old arcade game *Super Spy* from Sega, where you had to drive a car up a busy motorway, dodging innocents and nobbling the baddy spies? This is a reasonable version of that game, which isn't too great – but it's free so who's complaining?

Verdict 89%



Your Turn! Part 5

If you've been following the Bullfrog's programming tutorial over the last few issues, your game will be ready for the finishing touches. Read on as the boys (pictured above) explain what to do...

How to program your own games in assembler

Welcome to the fifth and final part of our series teaching you how to program games using the professional techniques of the Bullfrog programming team.

This month, **Scott Johnston** explains how to add some finishing touches and tweaks to the game, and how you could take it further when it comes to starting out on your own games.

This is the last issue in our assembly programming series, and since the demo could almost be considered a 'proper' game, this month we will concentrate on enhancements – some simple, and others not quite so simple.

SOME SIMPLE CHANGES

The following changes are really tweaks to the equates we set up. The main problem with the game is the massive momentum we have on our guy. Way too much. What you can do is alter the variables:

MAX_SPEED, used to increase or decrease the speed at which you move.
ACCEL, the amount your man changes speed by when you move the joystick.
SLOW_DOWN, the speed at which you slow down when not moving the joystick.
JUMP, how far your man can jump, works in relation to GRAVITY.
GRAVITY, how quickly you will fall back to earth.
MAX_FALL, how far you can fall before suffering from a case of terminal death.
NO_LIVES, the actual number of lives that you have.

If you think that the collision is a bit dodgy, change the man's width, or the bad guy's width. To make it harder to die, change MAN_WIDTH to a smaller number: the smaller, the harder for you to touch something.

Continued overleaf

If you find it a bit difficult to stand on the platforms you can change the size of your feet: reduce the left foot, and increase the right foot. This will make it easier for you to stand on the platforms, but might have the strange visual effect of standing in mid-air.

If you run the version given away on this month's disk, you will see that a simple title screen is present. This was created with the code inside the routine `intro.s`, and was called at the start of `display.s`. You can do what you will with this code.

There is also a very simple 'Game over' display. At present only the highest score is coded. It will be quite a good exercise for you to change the routine that is present to that of a high-score table with names for the places.

Another thing for you to do is to try a code a delay. If you press the fire button for too long when you start, the first thing you will do is jump into the air. Similarly, when you have finished playing if you press fire at the end screen there is a chance of you going right past the introduction screen!

Collection Bonus

You may have noticed that the ankhs have a state defined for them: change the code so that if you pick up an ankh which has a different state, then you get double score or something similar. The graphics for a flashing ankh are also included in the file for this month's program listing, so give that a go.



Here it is - the final Bullfrog demo game, running and jumping with collision detection, a sound track and a scoring system.

Screen display

This is the slowest part of the program at present. It is drawn forwards at present: the data is stored consecutively, and is copied from memory to screen. Try storing the bytes as blocks of 48 (the amount we pick up inside the loop) but store them backwards. The bottom 48 bytes of the screen are stored as the 1st forty eight bytes of memory, so we can change the (a1) to a –(a1) and hence we would not need the lea command to adjust the address in a1. The quickest way would be to use the blitter chip, but it's too complex to explain here.

Speed

At present the whole screen is redrawn every turn. This is a large waste of time, in that there are only four or so sprites being updated at a time. If you change the system to a redraw, you will need to store a copy of the background that the sprites are about to be drawn onto. Then at the start of the turn, redraw the background, and then draw the new sprite positions. You should be able to get the system running at a 50th of a second very easily with this system.

Preshifted graphics

If this seems like too much work for you, then try using preshifted sprites. This is basically 16 copies of all the graphics, one at each possible shift position. These pre-shifted sprites are very quick to draw but take up over sixteen times the memory. Even with the limited graphics it will still involve a lot of work.

Organised palette

Having the palette in a specific order has some advantages. For instance, the font is an example of this, as is the bouncing logo, both are only drawn into a single plane.

There are of course loads of other little tricks that you could do to speed up this program, for example place all the drawing routines into the blitter. I am not going to tell you how to do all this for various reasons.

For starters, we do have to have *some* trade secrets! On top of that, they're mostly just little fixes and shortcuts we discovered when trying to solve a particular problem.

All the same, we think you've got enough to be going on with. This series should at any rate get you started in 68000 programming – the rest is up to you!

USE YOUR OWN GRAPHICS

Well, we finally got the *DPaint*-to-Sprite *Convert* program from the Bullfrogs, and just to make it as available to people as possible, it has been included on both Coverdisks – so if one has a read/write error, it can still be used from the other Coverdisk. Incidentally, if any of your Coverdisks don't work, you should send them back to the address at the bottom of the "Backing Up Your Coverdisk" bit on Page 10.

The *Convert* program is a handy utility for taking pictures done with a paint package like *Deluxe Paint* and transferring them into raw binary that can be included from within a *Devpac* listing using the Incbin (Include Binary) command. There are many examples of this function embedded in the demo code, so have a good ponder to see just how it's done. *Convert* can handle whole screens or those split up into a grid so you can use it for your background screens as well as your sprites.

Getting at it is not too much of a chore, but is not immedietely obvious. What you have to do is boot either Coverdisk (insert it into a freshly reset Amiga) and hold down the Ctrl and D keys. The startup-sequence will abort, and you will be left with a little CLI or Shell prompt to type at. Just type this and press the Return key (always press Return after typing Shell or CLI commands):

```
Convert
```

The program will run, and ask you for four answers. The first thing it needs to know is the path and filename of the picture that you want to change into binary code. Just typing in the name will not be enough — for instance, if you had a picture called Mypic.IFF on a disk called Empty, you would type in:

```
Empty:Mypic.IFF
```

Next you have to type the path and name of the data file that the *Convert* program produces. So if you want to put the binary file onto a disk called Devpac2, in a directory called Data, with a name of Mydata.BIN, you would type something like

```
Devpac2:Data/Mydata.BIN
```

The penultimate thing you have to type is the height of the graphics in pixels. If your sprites are, say, 32 pixels high, then type 32. If you want to do a whole screen (200 or 256 pixels high) just type the number. Don't forget to press Return.

Then type the width of each pixel block – again, the smaller the width, the bigger the number of blocks that the graphics will end up in. Check out the illustration for a couple more insights.

Please do not think that *Convert* is the only program that can get your graphics into raw code. There are many similar programs available, many of which are used by Public Domain coding groups like Kefrens, Rebels, LSD and many more. Some of them are better than this convert program (Kefren's *Metallion Utilities* are especially good, if incompatible with Workbench 2) and some aren't, but they all do the same job.

GETTING AT THE CODE

As usual, the code is not in a usable form straight from the Coverdisk – but it's really easy to get it onto your *Devpac* disk. Incidentally, many readers get worried that they need every single tutorial. This isn't true. So long as you have a copy of the *Devpac* disk from ***Amiga Format*** issue 39, you can use any of the demo code on its own.

Anyway, to get the code on to your disk all you have to do is swtich on your Amiga and load Workbench. Once the drive light has gone out and you are left at the Workbench screen, pop in the *Prodata* disk and double-click on its icon. You will see an icon labelled Install_Bullfrog_Files. Double-click on this, and insert the *Devpac2* disk when the machine asks for it. You shouldn't have to swap disks more than once or twice at the very most (though this depends on your Workbench version).

Some people have asked how they install the files onto a blank disk, rather than the actual *Devpac2* disk. The easiest way to do this is to format a blank disk, and call it *Devpac2*. Go through the above procedure, and instead of the real *Devpac2* disk, put your blank in. Then rename the disk to whatever you want. Simple eh!

OVER TO YOU

There has been a tremendous response to the Bullfrog programming series, yet this is the end of it. However, everybody wants more code! More examples, more tutorials, more techniques, more tricks, more things to avoid. So we are going to continue printing material on machine code and putting source code on the Coverdisk – *provided* we keep receiving suitable material.

There are two ways in which you can help. The first is by writing in to us and asking for whatever kind of stuff you want to see – we have a good idea of the sorts of routines and demos you want, but the more requests we get for a particular subject, the more chance we'll cover it.

The other way you can help is to send in suitable material – source, examples, questions and answers. Again, we already have some material to keep the series going – but we need more all the time. Programming was the subject which most people wanted to see more of in the magazine when we asked six months ago, so if you still want to see more, please help us. Send in your requests and submissions to; *Devpac Continued*, ***Amiga Format***, 30 Monmouth St, Bath BA1 2BW, UK.

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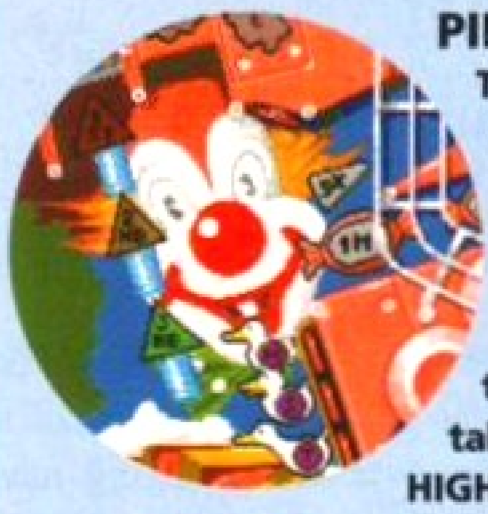
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E & OE

Chart busters

Bought a chartbusting game? Are you muddled and fuddled? Or are you just stuck and in need of help on the latest releases? If so, then read on…

PINBALL FANTASIES



Type the following cheats in before you select the number of players…

EXTRA BALLS – gives you five balls instead of the usual three.

DIGITAL ILLUSIONS – stops the ball going out of play. You won't be able to enter your name on the high-score table, or collect your bonuses though.

HIGHLANDER – makes your balls heavier.

VACUUM CLEANER – clears high scores.

EARTHQUAKE – disables the tilt function.

FAIR PLAY – sets cheat options to default.

HUMANS



Here are some early level codes to the *Lemmings*-style puzzler:

1 – Darwin	2 – Andie Pandie
3 – Get a life	4 – Carlos
5 – Howie	6 – Mooble
7 – CSL	8 – The Humble One
9 – Pixie	10 – Milestone

AQUATIC GAMES



Some cheats and tips:

100M SPLASH – run along the top of the water, then jump over the pelican. He will fly off, then come and carry you over half of the course. If you knock all three toucans off, two pelicans will carry you in turn.

In one-player mode, don't start running, just let the penguin kick you until you fall in the water. This will give you a 10,000-point bonus and reset your time.

JUGGLING – rotate joystick madly to juggle all five balls.

SHELL-SHOOTING – go to the right, then jump on the jelly limpet. You will go through the roof, where there is a king limpet, bonuses and limpet mines.

BOUNCY CASTLE – a forward or backward somersault followed by a twist will give you a spring box. Use this to gain greater height. Do a twist at the top of your jump to go through the roof for bonuses.

HOP, SKIP & LONG JUMP – make the final jump and keep waggling while in the air for greater distance. If you get a really long jump, prepare for a surprise…

UNICYCLE – rotate the joystick slowly and steadily instead of manically.

FEEDING TIME – if butterfly hits fish, you will get a 1,000 point bonus. Time throwing sweets to the fish so that you trap butterfly between fish for a bonus.

KIPPER WATCHING – leave the clock and let it ring for a large bonus – watch the seals, though…

Game Busters

Here's an extended GameBusters – a massive six pages filled with hints, tips and solutions to the games which are bringing you to your knees in frustration. **Andy Nuttall** is the man to help…

PUTTY IN YOUR HANDS…

£25

Considering this silly platformer's excessive popularity, (plus it's been bundled with new A600s) hints and tips haven't exactly been forthcoming for Putty. So here in the **Amiga Format** office we decided to reward the one reader who sent some in with a £25 voucher…

SO YOU WANT SOME HINTS THEN?



Dweezil makes an unusual entrance…

- At the start of the game, go left out of the gym door to finish the level quickly.
- Look for things that stand out of the scenery, because they could contain hidden bonuses.
- Always keep on the move.
- Punch, squash or absorb anything and everything that moves.
- On later levels give the Bots cups of coffee to stop them from moving.
- Always drop long distances – as long as there are no spikes to break your fall!

A ROUGH GUIDE TO FINDING BONUSES…

Level 1-1	Absorb the spider to get some food. Jump to the putties in the window for a score bonus.
Level 1-2	Jump around to find watches.
Level 1-3	Go to the bottom-right of the screen, and jump to receive a score bonus.
Level 2-1	The tree at the top of the level gives you extra score, and the tree at the bottom gives you Dweezil power.
Level 2-2	The first tree gives you a score bonus, and the one above it gives you a pair of false teeth if you jump.
Level 2-3	If you jump on the lowest tree on the right you will receive the all-important bubblegum.
Level 3-1	Mould into a rabbit to kill the Gut Buckets, and turn into an Electro Worm (?) to kill the light bulbs. Jump at the top for extra power-ups.
Level 3-2	To get Dweezil power, jump on the picture. Jump near the planet to activate Uncle Ted.
Level 3-3	Jump at the girl's face and the computer screens in order to get an arrow and an elevator.
Level 4-1	Jump at the middle door at the bottom to activate Uncle Ted. At the top of the level, jump at the right gong to get an elevator.
Level 4-2	Jump at the middle door to activate Uncle Ted, and at the dragon symbol for bubble gum. Jump on the door for an elevator.
Level 4-3	Jump on the symbol on the right for an arrow.
Level 5-1	There are plenty of bonuses to be found on this level. The best one to get is the dustbin – to obtain this you have to jump on the cannonballs at the top of the level.
Level 5-2	Some of the igloos have food in them.
Level 5-3	Some of the doors have food in them.
Level 6-1	Jump around to get arrows.
Level 6-2	There are bonuses in the pictures.
Level 6-3	Jump near the tower for a surprise.

Paul Wills Taylor
Horncastle

Shadow of the Beast 3



The Beast series has been consistently good looking, but in the past the games have been very annoying `when you die, and Beast 3 continues that tradition. So what better than some tips from the programmers to ease your frustration…

LEVEL ONE: FOREST OF ZEAKROS



Run right, shoot the circular plants in the trees while avoiding the purple blobs that are fired at you. Jump on the elevator, then flip the switch once. Wait for the lift to reach the top, then run right, collect the gold, and shoot the goblins that are running towards you. Continue right, level out the two platforms by shooting the first wheel a couple of times, then collect the grenade.



Shoot the cog three or four times to level out the two platforms – then watch out for the lasers...

Change to the grenade from your inventory by pressing F1, then shoot the lasers on the moving platforms. Collect the key from the fourth platform, then go back to the first. Wait for it to go down, then use the key on the door and collect the gold. Go back up on to the platforms, then run right towards the village.

Shoot the goblins, then go down the ladder and run right while shooting the other goblins. Shoot at the meat which is cooking on the fire, and push it just under the spikes. Collect the key, then go back and use it on the monster's cage. Jump on the ladder, then follow the monster until it gets killed by the spikes. Collect the gold, then jump on to the jet platform.



End-of-level guardians don't come much bigger than this – remember to keep jumping, and shoot a lot...

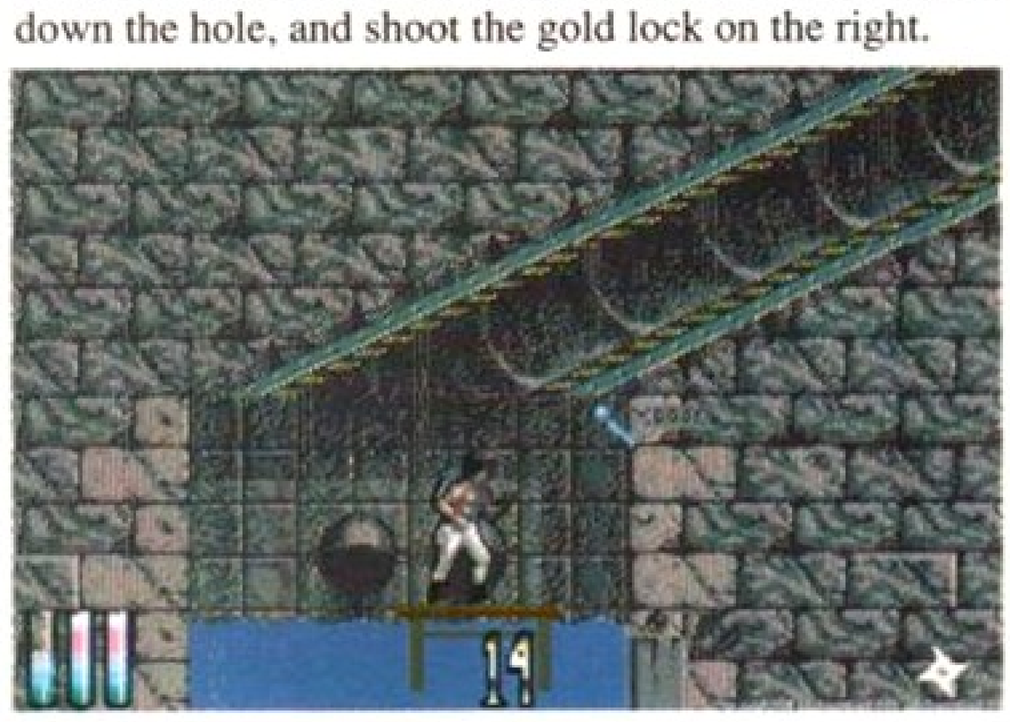
Move the platform to the left, then level it out so that the rock is carried with you on the way up.

Carry on until you get to the top, then push the rock to the left until it falls over the edge. Jump to the left so that you land on the platform, then run up to the metallic spiky things on the left. Wait until the first spikes disappear, then run through them. Do the same thing for the second set of spikes. Fall down the broken cliff, then repeatedly jump and shoot at the guardian until he dies. Collect the skull.

LEVEL TWO: FORT DOURMOOR



Go right and hit the switch, then run left with the wheel. Fix the battering ram, and run right with it. Destroy the door, run over the bridge, and duck down. Destroy the platform that the balls are bouncing off, then run right and kill all the wasps before collecting the gold. Go left to fall down the hole, and shoot the gold lock on the right.

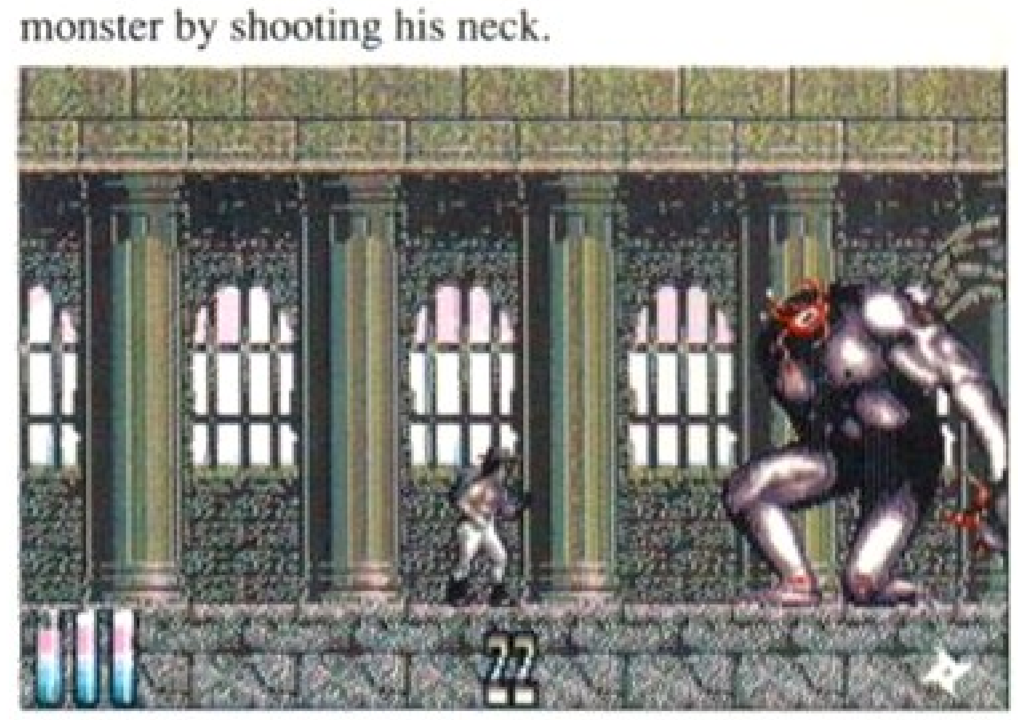


When you float to the top, this lever opens both the gates at the bottom, so you float down again.

Go right and fall down the tunnel, then move the table left until it's just underneath the porthole by the door. Jump on to the table, kneel down, and shoot the lever on the left. The table will move upwards. Shoot the lever on the right, then wait until you go back down. Go right, collect the gold and go up the ladder. Push the table into the water and kill the monster.

Jump right over the gap, then push the box to the left until it falls. Jump left over the gap, then walk right until you fall. You will now find yourself standing on the box, so walk off to the left and quickly push right so that you fall on to the table. Shoot the box until it explodes into splinters, then go right until you see a barrel. Now you must quickly jump over the hole, shoot the monster, then jump back over the hole again. Do this repeatedly until you kill the monster, but remember to keep on the move, or the crane will get you. Now go back and push the barrel to the very end of the floor, near the hole.

Go down the ladder, then close the left shutter (but don't kill the green monster yet). Go to the top of the ladder, then go left. Jump over the swinging mace, then collect the gold. Go right, and kill the beheaded monster by shooting his neck.



You don't need to kill the headless monster in order to complete the level – but it's incredibly satisfying...

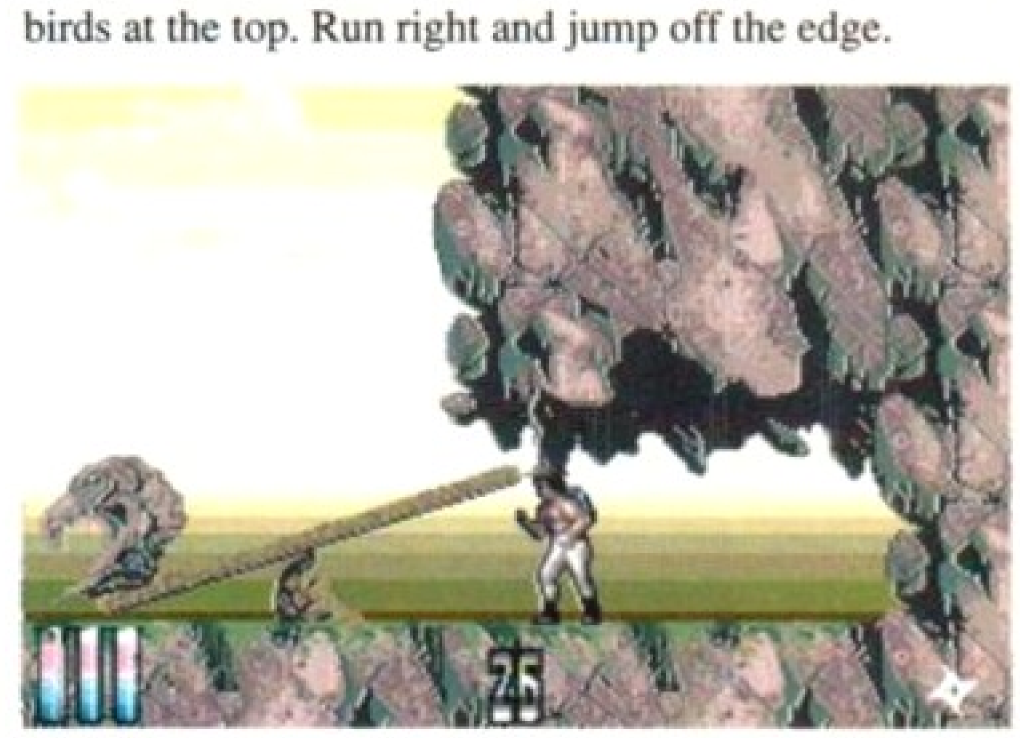
Go down to the place where you killed the man, and fiddle around with the lift controls. Pick up the barrel and put it near the ladder on the conveyor belt.

Get in the barrel, but don't close the lid. Shoot the belt switch, then close the lid. Fall down the hole, and a monster should drag you along and drop you in some water. Jump on the land when you reach it, and go left.

LEVEL THREE: CAVES OF BIDHUR



Run right until you are past the two creatures on the bridge, then jump up and shoot them from behind. Continue right and jump on to the first branch. Stand as far right as possible, face left, then jump up the branches and shoot the nest and four birds at the top. Run right and jump off the edge.

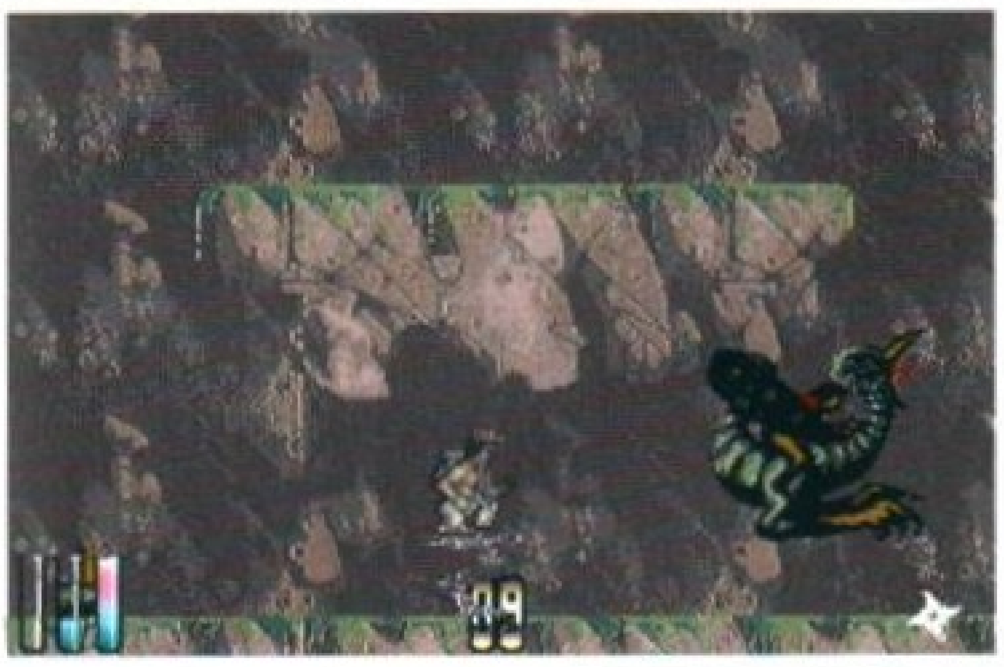


You will have to try to catapult this ugly-looking figure so that it hits the bird cage.

Keep going until you see a table, then shoot the left leg. Jump to the other side of the table, and shoot the right leg. This leaves a pivoted plank. Shoot the head in the rocks from behind, so that it falls on to the left of the plank. Push it as far as possible to the left, then climb the ladder and run off the ledge to the right. You will catapult the head up so that it hits the bird cage.

Stand in front of the bird, and press fire. Once you are on the bird, stand diagonally up and right until you see a column of metal balls. You will also notice a set of adjustable runners. Adjust them so that they will direct the balls into the top cave, then release the first three balls by shooting the switch at the top. Now adjust the runners so that they lead to the next cave down, then release the remaining balls. Fly down to the shaft below until one of them drops a hammer – pick that up then fly back up to the top cave.

Dismount the bird, then go right through the gap – dodge left when the slab falls. Change your weapon to the hammer, then push a metal ball to the edge of the



This section's possibly the most difficult part of the game – prepare for much frustration shooting birds...

shallow pit. Shoot the slab a few times to move it on to the metal ball, then keep moving the balls from the back of the slab to the front – keeping the slab moving. Once the block reaches the right of the shallow pit, keep throwing the hammers until it won't move.

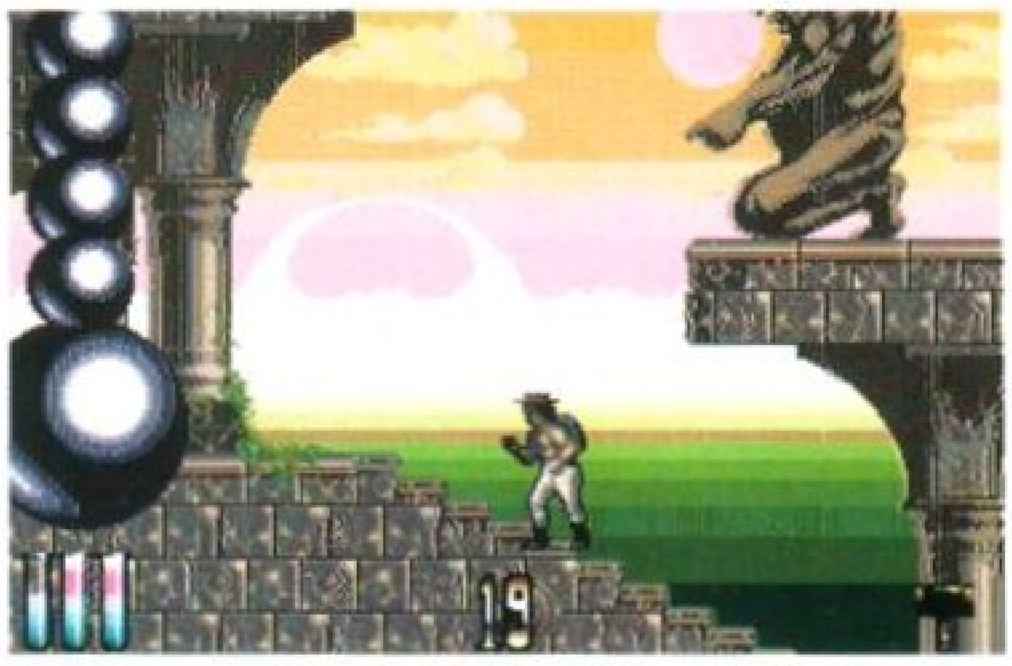
Change your weapon back to the throwing stars, then use the slab as a step to reach the higher platform. Go right and kill the monster by shooting it repeatedly in the eye. When it's dead, go right and collect the empty glass flask from the lab. Go back to the bird, get on it, then fly to the next cave below the one you've just been in. Fly past the bouncing balls to the edge of the red lake, dismount, then select the flask as the current object. Jump into the middle of the red lake, then press fire to fill the flask.

LEVEL FOUR: NOSTHOMAK

Run right, and duck the flames while shooting the flame-thrower. After it's destroyed, continue past the steel ball then go downstairs. Shoot the left leg off the table, then push it as far right as it will go – don't fall off the ledge yourself. Shoot the bats to reduce the harm that they do to you. Push the bookcase left until it's just before the library sign, then climb the ladder and jump on top of the bookcase. Jump and collect the hammer.

Climb up the ladder, and go back up the stairs to the large steel ball. Shoot the ball twice with your throwing stars, then switch to the hammer and start rapidly shooting at the ball until it's at full swing. Jump on to the ball as it's coming towards you, and let it carry you up to the high platform on the right. Jump off the ball, then switch back to your throwing stars and shoot the ball when it's at the highest point of swing. The ball should now detach itself from the chain and roll down the stairs.

Continue right, past the sliding puzzle – it's not necessary to complete the puzzle – then go down the



Keep shooting the metal ball until it's at full swing, then jump on it and leap to the platform above.

ladder into the crane booth. Pick up the fish at the bottom of the top-left tank, and feed it to the top fish in tank three. Pick up the latter when it has eaten the small fish, then feed it to the fish in tank one. Take the fish from tank three, and feed it to the small shark in tank two. The small shark is the only fish that will not harm you. Move to the exit box and press fire.

Climb the ladder, then run through the tanks. Go down the ladder after tank three, and fall down the drop to the right. Jump over the ball, then climb down the ladder. Run right, jump the small pit, jump on the ledge, then shoot the switch to turn the furnace on. Stand next to the furnace, select the hammers and keep



Catch the fish in the right order – but be careful, choose the wrong one and you'll be back at the beginning.

shooting the furnace until it won't move any further. You will see some spikes hanging from the ceiling from a chain slightly to the right. Switch your weapon to the throwing stars, then jump up and shoot the spikes twice and a small crack appears in the chain.

Switch your weapons to hammers, then repeatedly jump up and shoot the spikes until they are at full swing. Quickly change back to the throwing stars, and shoot the spikes when they're at the highest point of their swing to the left. The spikes will then detach from the chain and plug the shallow pit on the floor.

Go left, and climb the ladder. Jump over the large ball, and push it to the right until it falls into the furnace. Run right, and jump on the small platform next to the furnace switch. Wait for the ice to start melting, then when the top is just below your platform jump on to it and then immediately to the ledge on the right. Hit the switch on the wall which will turn off the force field below you. Wait for the molten metal on the floor to cool, then drop down from the platform. Collect the crystal on the floor, and walk right until you're directly beneath the other crystal which is embedded in the ice. Keep shooting the ice with the throwing stars until it shatters, and you will then catch the second crystal.

THE FINAL CONFRONTATION: DEFEATING MALETOTH

Run and jump on to the platforms, then repeatedly fire at Malethoth's head. Change platforms every time he goes past you, and try to destroy him ASAP.

OH NO! IT'S THE PATHETIC TIPS!

Every month we receive hundreds of letters from readers offering tips for various games. Although most of them are fine, some are not-so-hot. This month we begin a series containing some of the more bizarre entries...

The honour of being the first among equals goes to Michael Confor of King's Lynn, who writes: 'If you know you're going to die – for example, when the beast grabs you with the claw – quickly tap the Help key, and you will restart at the last load.' That's great Michael – but I'm afraid that you forgot to write which game this tip applies to!

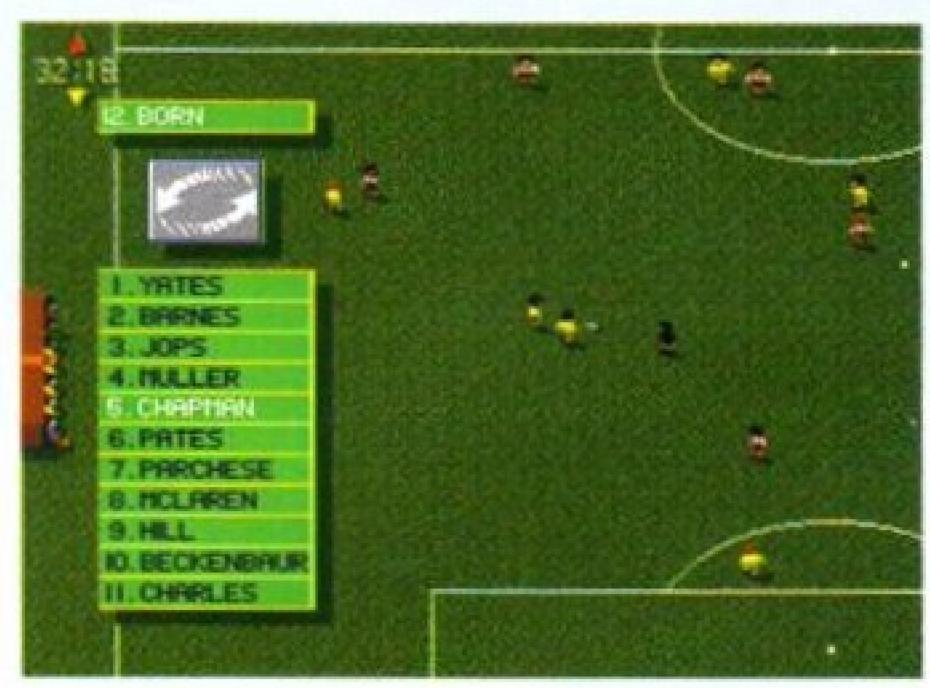
On a similar planet to Michael is Jonny Reed from Dartford, who wrote in with the following: 'In *Monkey Island 2*, hold down both Amiga keys and both Alt keys, and you will be prompted with the message 'do you want to win?'. Press 'Y', and you will be instantly transported to the end sequence.' Guess what? It doesn't work. At all. Ever.



Here's a tip on *Monkey Island 2* that's about as useful as a condom on a stud farm.

Dave Paget of Radstock came up with this gem for *Kick Off 2*: 'If you hold down the 'D' key when the team who didn't kick off have the ball, a trail of players will be left on the scanner until you let go of the key.' Superb! Thanks, Dave.

Simon Ambrose of Warwickshire goes one better with a 'cheat' for *Sensible Soccer*... 'To have a chance at beating the top teams,



If you find that Beckenbauer is a bit too good a player for you to handle, put him in goal...

first choose one for yourself, then go to 'Edit Teams' and choose your opposing three teams. Swap the opponents players around so that the star players are on the bench, put the 'keeper in at centre forward and put an outfield player in goal."

Excellent! If you can't beat your opponents fairly and squarely, totally obliterate them first and they'll be easy pickings! That sounds like just the sort of battleplan that Saddam Hussein would use...

Thanks for those – they're completely useless... more next month.

VEKTOR STORM



You are the Commander of a small reconnaissance fleet sent to explore an anomaly in the space-time continuum, otherwise known as a "Black Hole". By way of an unexplained equipment malfunction, your fleet exits hyperspace too close to the vortex and is drawn into the void.

When you emerge from the worm hole, you find yourself in a universe fragmented from your own since the big-bang. Everything you knew as truth is now false. Even the very laws of physics have changed.

For countless eons, a sole entity has occupied this universe alone, waiting....







To return to your universe, you must first meet the challenge set before you by your captor: *Beat him at his own game.* Your four remaining ships must fight against an arsenal of intelligent weapons on a series of battlegrids.

The rules are simple. The stakes, ***Your very existence!***

Experience graphics, animation and stereophonic sound like you've never felt before... Pick up a copy of ***Vektor Storm*** today, and prepare yourself for the fight of your life!

IN STEREO (Where Available)

Minimum System Requirements:
512K RAM With Kickstart Version 1.3 or Higher.

AMIGADOS Release 2 compatible

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Plan 9 From Outer Space

Are you stuck in a world of B-Movies, hub-caps and magic Styrofoam? Know what we're talking about? Then you're playing Plan 9! GameBusters is here to move you on to Plan 10…

£25

Before you start, remember – if you want to watch any of the reels of film found in the game, then you can either watch them in the editing room of Cheapflik Studios or any of the project booths you will come across.



Fat American film producers aren't really known for their mastery of the English language…

At the start of the game, you'll find yourself in the producer's office. Go in the hall, then down to the foyer. Walk into the street, past Joe's Diner and into the Hub-Cap Bar. Talk to the woman (if it is a woman) by the bar. She will mention Vlad the Impaler St, which is where Bela Lugosi used to live.

Talk to the barman, and buy the bottle of rum from him. Go back to the producer's office, and see if he has gone. If he hasn't, then keep going in and out of the studios for a while until he does. If you examine his desk, you will find a key for the editing room. Go in his private room on the right, and examine the pictures on the wall – in particular the one on the left. This will give you an address – Lot 9, Pleasant Rest, Highgate.

Go downstairs and ask the doorman to call a cab. Tell the cabbie to take you to Lot 9, Pleasant Rest, Highgate. When you arrive at the cemetery, go through



Examining the top left-hand picture on the wall will give you an address to visit, then let the taxi take the strain.

the gate and enter the crypt. Examine Bela's body to discover a door key, then pick up the hammer. Get back in the cab, and go to Vlad the Impaler Street. Enter the house, then go left into the study.

Examining the flyer on the table next to the books will reveal an advert for the local shopping mall. Pick



Examining the stag's head, though, reveals a credit card. Funny, that – I usually keep mine in my wallet…

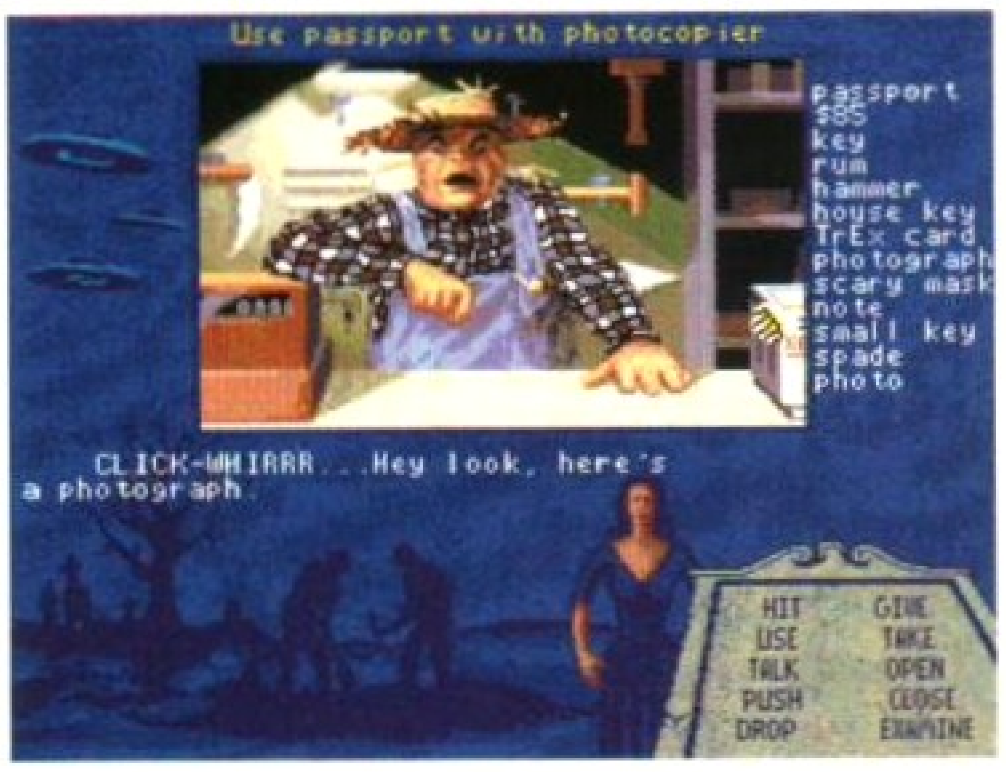
up the pictures of Bela from the table, then examine the trophies on the rear wall. Push the one on the left, and a credit card will fall out. Leave the house and take the cab to the Hypermega Mall. Press the lift call button, then go inside when the doors have opened. Press button two, then enter the Lycanthropository.

Talk to the woman, use the credit (TrEx) card to buy the scary mask, then examine the mask and you'll find a note with a key. Read the note, then go to the fifth floor and enter the Hardware Store. Say to the assistant: "Nice day for gatherin' corn," then examine the spade and buy it (using the credit card). Get a copy of your passport photo by using the passport with the photocopier. Go to the sixth floor, and enter the Bank.

UGH! – ENOUGH! IS ENOUGH!

Well as great three-letter, Neanderthal game names go you can't go wrong with Ugh! And as a cute little platform game you can't go far wrong either, though some people do go badly wrong, but that's why we're here with the level codes…

Level	Code	Level	Code	Level	Code	Level	Code
2	SELBSTLAEUFER	19	PICASSOONBICYCLE	36	FISHYREQUISITTTTE	53	THESENSIBLEPARTY
3	HENNABREGGL	20	SPANISHINQUISITION	37	ARTHURFIGGIS	54	ADOPTADAPTNIMPROVE
4	PFANNEHEISS	21	LUIGIVERCOTTI	38	CRUNCHYFROG	55	HELLOSAILOR
5	SOICHGOMBASEPP	22	JIMMYBUSSARD	39	SPRINGSURPRISE	56	ARTHURTREE
6	2PFUNDHACKFLEISCH	23	KENCLEANAIRSYSTEM	40	WALLYWIGGIN	57	ABLOCKOFWOOD
7	DOGODDERDEIG	24	JOHANNGAMBOLPUTTY	41	SIXTEENTONWEIGHT	58	LIONTAMING
8	SPAMSPAMBEANSNSPAM	25	TRAINSPOTTING	42	RASPERRYKILLER	59	RONOBVIOUS
9	SEMPRINI	26	BICYCLEREPAIRMAN	43	SCOTTOFTHESAHARA	60	CHANNELJUMP
10	PROFRJGUMBY	27	IRVINGCSALTZBERG	44	BISHOPOFEASTANGLIA	61	TUNNELINGTOJAVA
11	CONFESS	28	THEENDBERG	45	POLLYTHEEXPARROT	62	MAURICEZATAPATIQUE
12	MITTERMEIER	29	HOWTOFLINGANOTTER	46	EWANMCTEAGLE	63	KENBIGGLES
13	DIESCHNICKIANGST	30	THECATSATONTHEMAT	47	ASCOTSMANONAHORSE	64	ALIBAYAN
14	INTERESTINGPEOPLE	31	CONFUSEACATLTD	48	KEITHMANIAC	65	KENDOVE
15	INSURRANCESKETCH	32	DISTRACTABEE	49	NOTGOODENOUGH	66	TIDDLES
16	ITSTHEARTS	33	MITTELSCHMERTZ	50	STILLNOTGOODENOUGH	67	THENAKEDANT
17	ARTHURTWOSHEDS	34	INSPECTORTIGER	51	NUDGENUDGE	68	KENSHABBY
18	HAROLDTHESHEEP	35	LOOKOUTOFTHEYARD	52	THEWOODPARTY	69	ALBATROSS



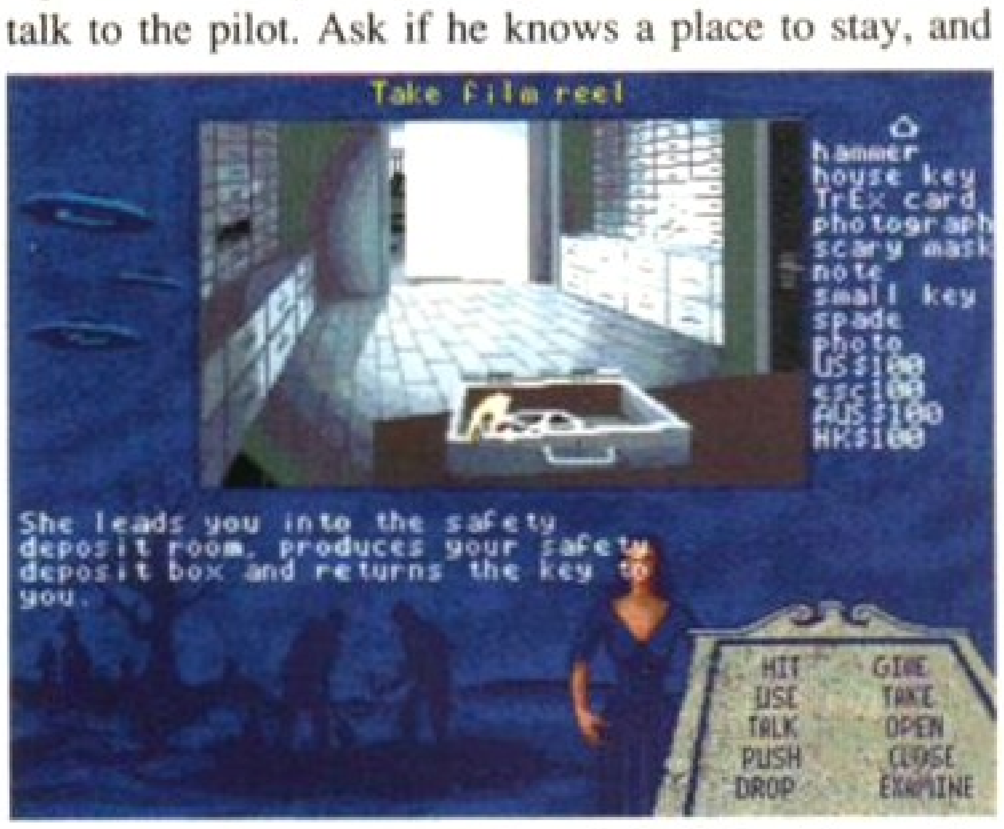
Use the blurred photocopy in the pilot ID so that you can board the plane. Oh, and learn how to fly...

Talk to the teller, then change some of your money into the currencies of Washington, Brazil, Hong Kong and Australia. Examine the credit card and note the number on the back (350143). Hand the key you found in the mask to the teller and she'll ask you for your deposit box number. Look at the range of numbers she offers, and pick the one closest to yours (530143).

Open the box and take the reel of film (hooray!). Examine it, and you'll see that it has the word 'Wun' written on it. Next go to the Travel Agents on level three and buy a ticket to Rio (using the credit card).

Leave the mall and go to the cemetery. Enter the gates, then go left where you will find a grave with a wooden cross. Use the spade on the grave three times to dig it up, then you should come across the second reel of film. The reel should be marked 'Of'.

Go to the airport, and give the ticket to the airline rep. Board the plane, then go inside the cockpit and talk to the pilot. Ask if he knows a place to stay, and



The dull, lifeless vault contains a dull, lifeless film canister – coincidentally containing a dull, lifeless film...

note his name – he will tell you about something he left behind in Rio on his previous visit.

When you arrive in Rio get in the cab, and you will be taken to a hotel. Examine the book on the counter, and note the room number which the pilot stayed in. Ask for the same room, then go upstairs. Take the Pilot ID which is on the table, examine it for the Pilot's address – 21 Aviation Way, Studio Town. Replace his photo with yours. Now leave and go to the cave on the beach. The bats will take the picture of Bela from you and leave you alone. Pick up the third reel of film, which will be marked 'Lo'.

Go to the airport, where a group of security guards will arrest you and take you to the police station (note: it's a waste of time bribing the guards.) After your trial you will find yourself in a cell. Give the bottle of rum



What a scatterbrain that pilot is, leaving his ID behind in Rio. That's just asking for trouble...

to the guard, and he will leave – dropping a statuette on the way. Pick it up, and use the hammer on it. Inside you will find a slimy Deathhead Moth pupa (what kind of storyline is this, anyway?). Go to the airport, and give the Pilot ID to the rep. Fly home, then get a cab over to Aviation Way.

Use the credit card to open the door, then drop the spade, small key, room key and house key. Pick up the scuba gear, then go into the back garden where you'll find the fourth reel of film, marked 'Property'. Go to the store room of the studio, then pick up the love beads. Take a cab to the airport, then give the Pilot ID to the rep, select Australia as your destination, then board the plane.

Go to the beach, and talk to the sexy (?) bather – say 'Hi there! Nice weather'. Then ask her if she would like the love beads. She will take them, and lead you to a hippy commune. Fly home, and go to the building site outside Cheapflik Studios. Talk to the two blokes about the hippy commune, then go to the diner and pick up the balloon. Go back to the store room in the studio, then drop the mask and the note. Pick up the dictionary, then fly back to Australia and go to the hippy commune again.

Talk to the hippies about Fred, and they will give you a reel of film marked 'H.K.'. Go to the bridge on the left of the Sydney Opera House and talk to the painter. You will slip and fall in the water – quickly use the scuba gear before you drown. Pick up the

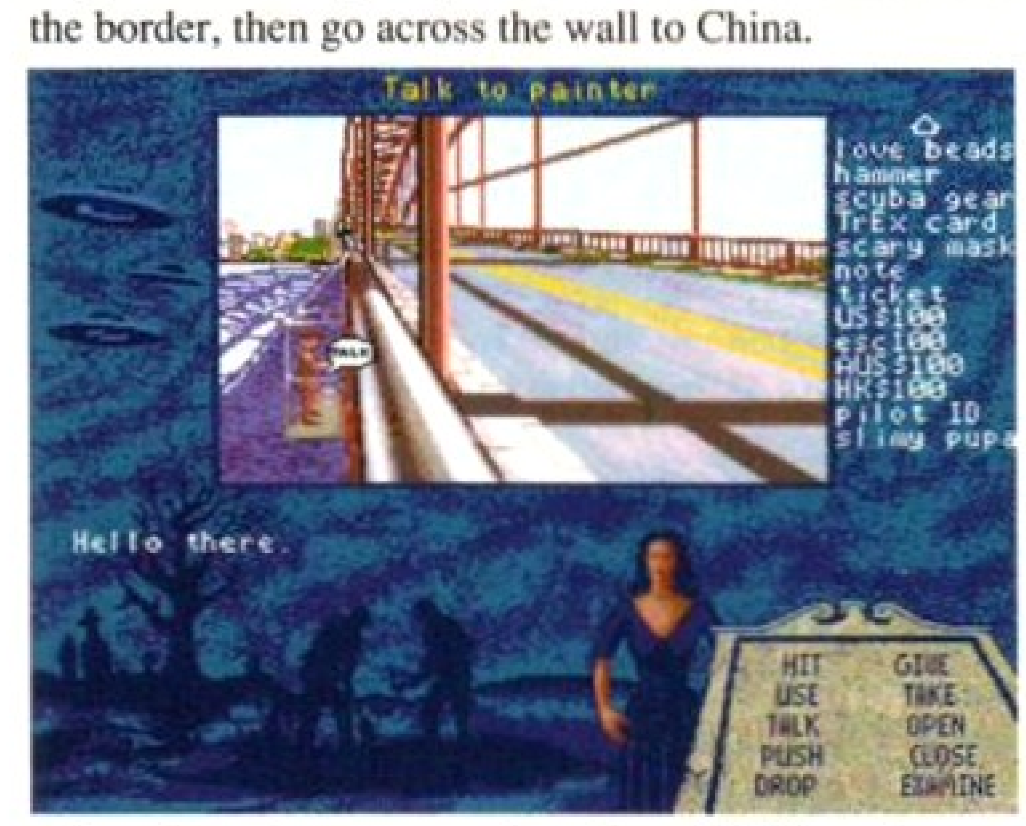


The nice house in Aviation way contains some scuba gear – you can't get up the stairs though, unfortunately.

crowbar, then use the balloon with the scuba gear. You will now shoot to the surface.

Fly to Hong Kong, and talk to the movie mogul. He'll tell you about the Netsuke which was stolen. Fly to Washington and talk to the chief, who'll send you to Cuba. While you're standing on the wharf, the guard will speak to you. To understand what he is saying, examine the dictionary. He will give cigars and a poster, so go back to Washington and give them to the chief. He will send you to the Smithsonian Institute.

Get in the taxi and when you arrive at the Institute give the slimy pupa to the curator. Go to the warehouse and examine the crates until you find one marked 'O.R. Yental, Hong Kong'. Use the crowbar to open it, it will reveal the Netsuke and the last reel of film. Fly back to Hong Kong and give the Netsuke to the movie mogul who will give you an ancient talisman. Go to the border, then go across the wall to China.



Talk to the painter too much, and you'll fall into the sea – fortunately, you have waterproof pockets...

A group of Ninjas will jump out and take you to a monastery. Quickly give the talisman to the monks, who will take you to see the Aliens... Game over, man... Game over.

Matt Taylor
Balcombe

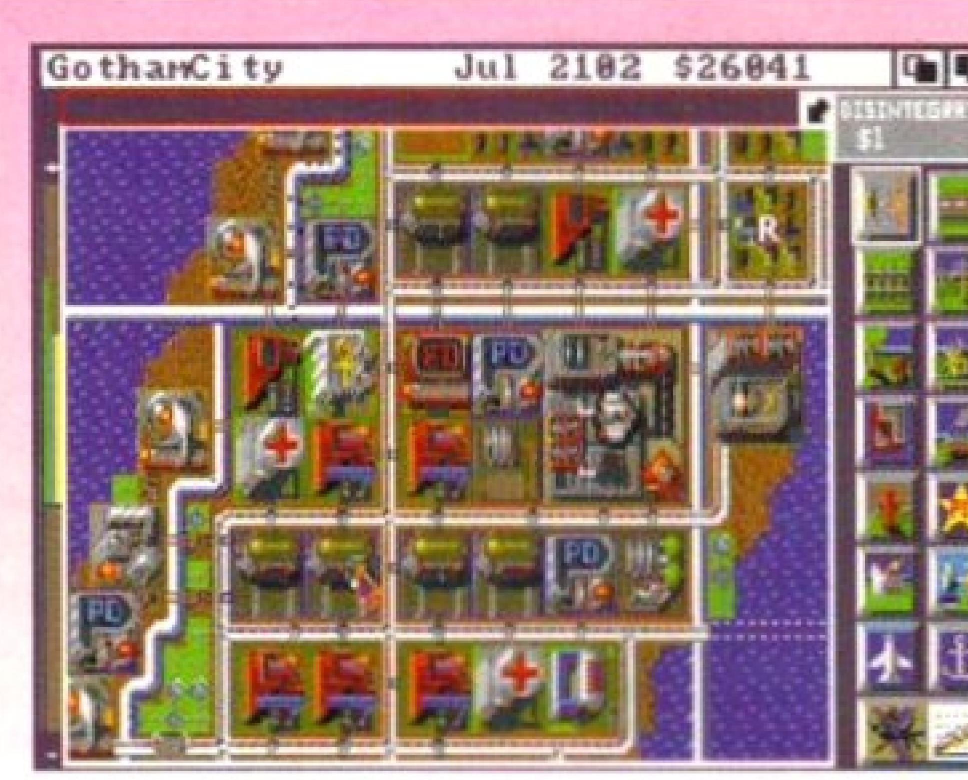
SIM CITY – LAND OF FAKES AND MONEY

Although Sim City has been tipped pretty extensively in the past, we still manage to acquire new tips on this simulation for wannabe town planners everywhere. So if you're a fan here's how to avoid natural disaster...

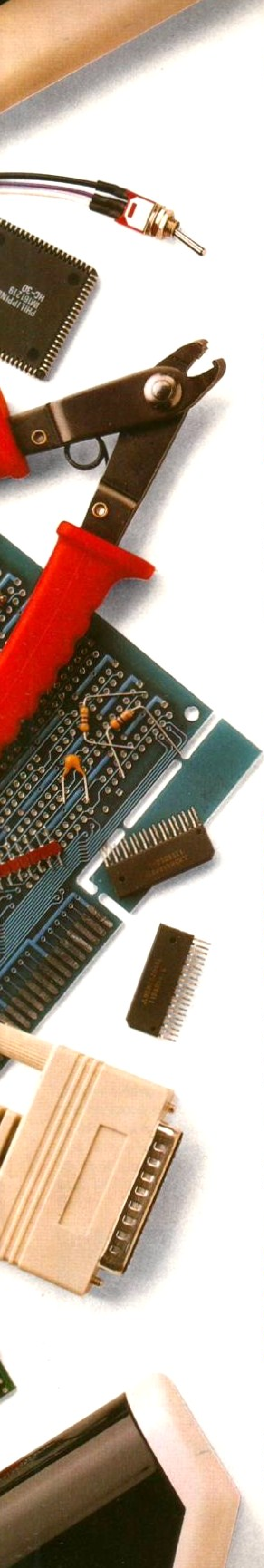
Most people know that by simply typing the word 'FUND' (in capitals) it will give you an extra $10,000. This can then be used as many times as you like, but the problem is that after every five times you will suffer an earthquake. So how do you avoid the earth tremors?

A good trick is to build up a huge fortune by typing 'FUND' loads and loads of times on bare terrain – that is, before you start to build your city. That way the earthquakes will do no damage, because there is nothing to be damaged. When you have enough cash you can start building. If you need some cash while playing, first off put the game on pause, then type 'FUND' repeatedly until you have enough money. Unpause the game and you will only suffer one earthquake – regardless of how many 'FUND's you've typed. If you save the game before restarting it, and then reload, you may be lucky enough to miss the earthquake altogether!

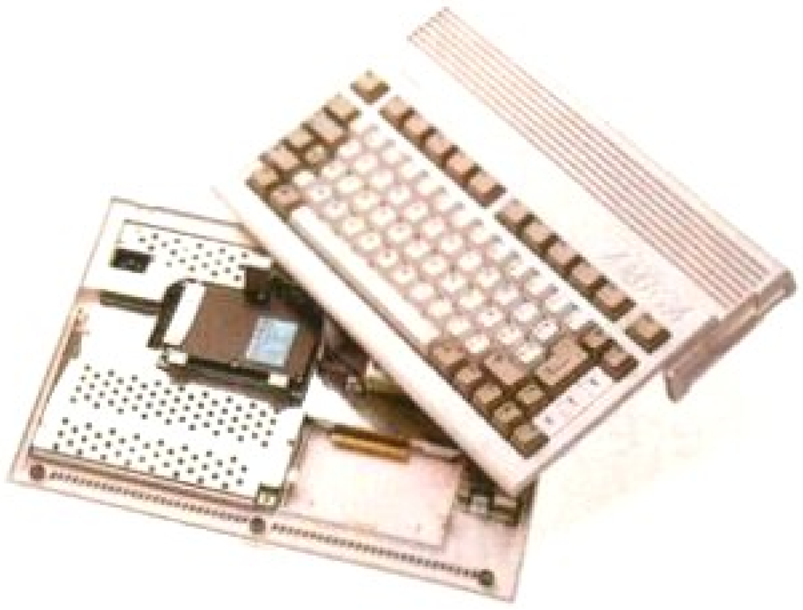
Maureen Ann Baker
Rothesay



Gotham City à la *Sim City*. It hasn't 'arf changed since Batman moved on to the Big Screen...



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Helping Hand

Hooray! The Hand of Helping is here once more to help gameplayers who are in need and distress. If you've broken down in a game, or if you've just broken down then you need the help of a very nice man. Sorry though, all we've got is **Andy Nuttall**...

RETURN OF EOTB2



Get that Remove Paralysis spell going, or you'll be Mantis soup.

Try as I might, I can't get into the big room in the north of Catacomb level three of *Eye of the Beholder 2*. I keep getting slaughtered by the legion of skeletons. Please restore my sanity and let me know how to defeat them. A cheat for infinite health would be helpful as well.

Russ Welsh
Hartlepool

Aha, bugged by the skellies, eh? First, you have to remember that the skeletons are continually being generated. Just outside the room containing the skeletons, you will find a small room with a lockable door. You must rush into the skeleton room, kill three or four skellies, then run back outside, go into the small room, lock the door and rest. Repeat this until they are all dead, then quickly collect everything from the room – especially the Darkmoon key hiding in an alcove. Then get out of there as quickly as possible.

A program to enable you to cheat the game was included on our Coverdisk Issue 38. This is still available from our Back Issues section (see the Contents Page), and it will enable you to adjust all aspects of your party, not just health.

I have got to the end of the game in *EOTB2*, and killed Dran Draggore, but then I am immediately wiped out by the dragon. Is there any particular item I need to kill it, or is my party just too weak to handle him?

Stephen Morris
Haslington

The dragon at the end is in fact Dran himself, but in a different form. To kill the dragon you must use the +4 Talon sword, which is the only effective weapon in this case. Hit him with it as many times as you can, but when you see him breath in – dodge out of the way quickly (if you value your eyebrows). If you have a numeric keypad, use it to move around – this will enable you to dodge more quickly.

Cheat in Little Puff

Way back in issue 39, Heather, Oliver and Charlotte Day wrote in with a query about the game Little Puff. *We've had a few solutions sent in, but they are a bit too long to print in full, so we were pleased when Christopher Hilbert and Richard Martin sent in a cheat.*

Simply type in 'FAT DRAGON NINJA', then press Caps Lock and L to skip levels. Unfortunately we couldn't test this out, but try it and see. Thanks lads.

Call of Eldritch

Did any of you out there buy *Hound of Shadow*, the HP Lovecraft-based adventure? I have come unstuck with it, and would appreciate any help or advice from fellow investigators out there.



Killing the mini-jouster is easy, but the level one guardian? Some find it more difficult...

Guy Cole
London

No, I'm afraid I can't help you out. But I'm sure somebody somewhere knows the solution so write in and help out our Guy.

Brutish bulldogs

In the game *Premiere*, how do I go about killing the Bulldog in the sub-game at the end of level one?

Robert Booth
Colchester

The answer is to shoot him before he can shoot you! It's a quick-draw situation, so when you see him go for his gun, hit the fire-button as quickly as possible. You will need to do this three times to defeat him.

Strike a light

How can I get hold of your marvellous *ScreenPlay* book, containing the clues to help me in *Dungeon Master*. I need to know so that I can finish the game and go on to *Chaos Strikes Back*.

Maureen
The Twilight Zone

The ScreenPlay *books are available from our usual mail order address in Somerset, which is printed on the Contents Pages of the magazine.* The Dungeon Master *hints in* ScreenPlay One *are particularly good.*

Pirates ahoy!

On a more serious note, we have had several requests for help with the adventure game Hook, *which involve the number of available mugs in the Crossed Swords pub. Various readers have phoned or written in with this particular poser.*

These people have complained that there is only one mug in the pub. This means they are using an illegal copy of the game. Funny one that, pirates playing a game about pirates.

Equally hooked

And now to someone who has a legal copy of the game, and a decent query to boot...

Please can you help me? I've tried following the instructions for solving *Hook* as set out in the November ***Amiga Format***. I managed to collect the anchor, washing pole, rope, three mugs, a pirate hat AND knock at Mrs Smeedle's door. In fact everything went well until I tried to use the pole to take the pirate jacket from Mrs Smeedle's washing line. She keeps stopping me pinching it!

J Weaver
Upminster



Although we printed the solution a few months ago, getting the uniform is still difficult...

Yes, I found this a little bit problematic as well. What you need to do is knock on Mrs Smeedle's door, then rush round as quickly as possible to the washing line and use the pole on the pirate jacket. If this doesn't work the first time around, keep trying – it will work eventually, believe me.

THAT'S ALL FOLKS.

Remember – keep the hints, tips and queries flooding in. We do read all your letters, but only the most interesting or more unusual make it on to the page. No stamped addressed envelopes, please, and no Action Replay cheats. See ya next month.

If you're stuck on a particular game or have a solution to a letter printed in the magazine, then write it down and send it in to us at HELPING HAND Amiga Format, 30 Monmouth Street, Bath BA1 2BW.

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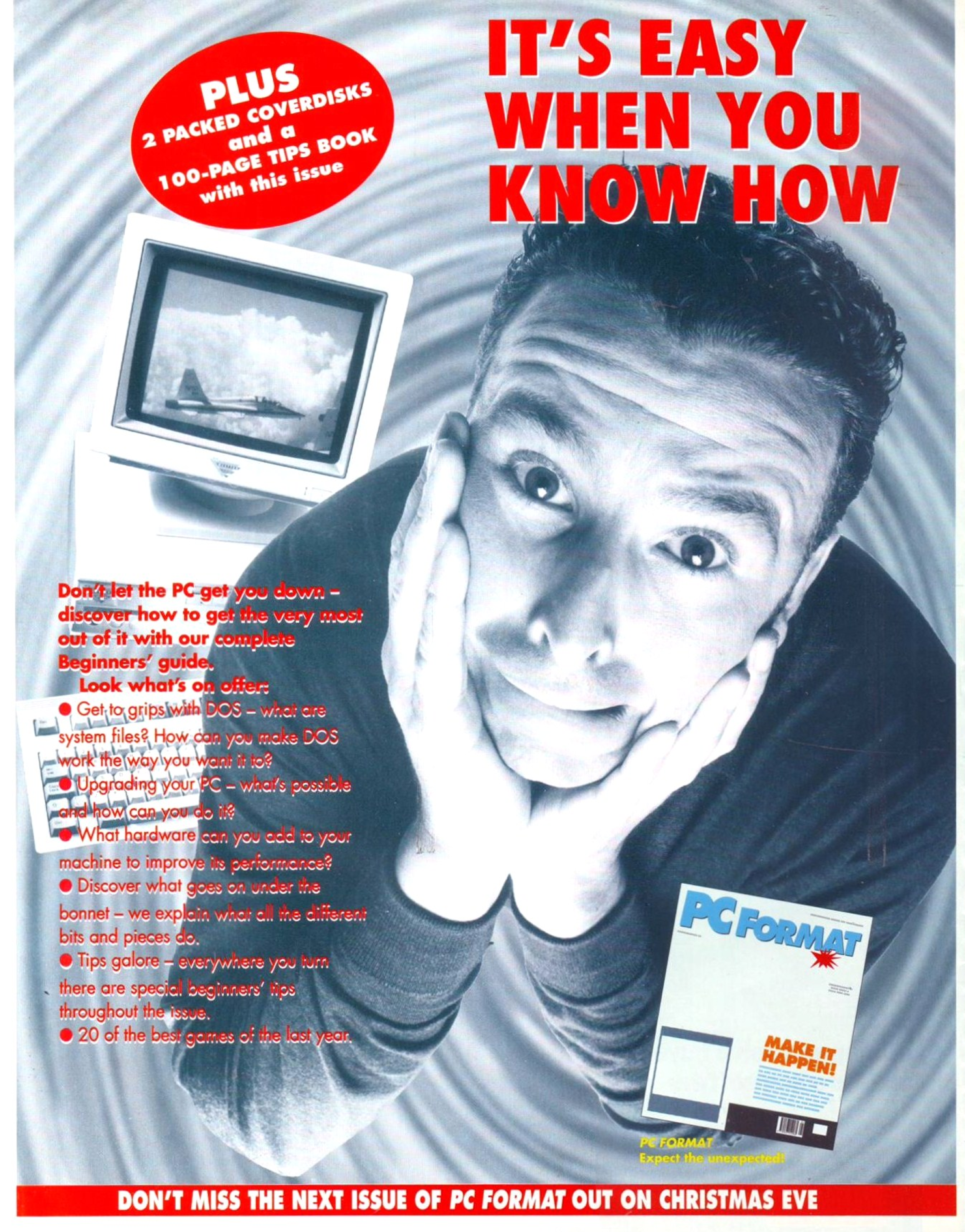
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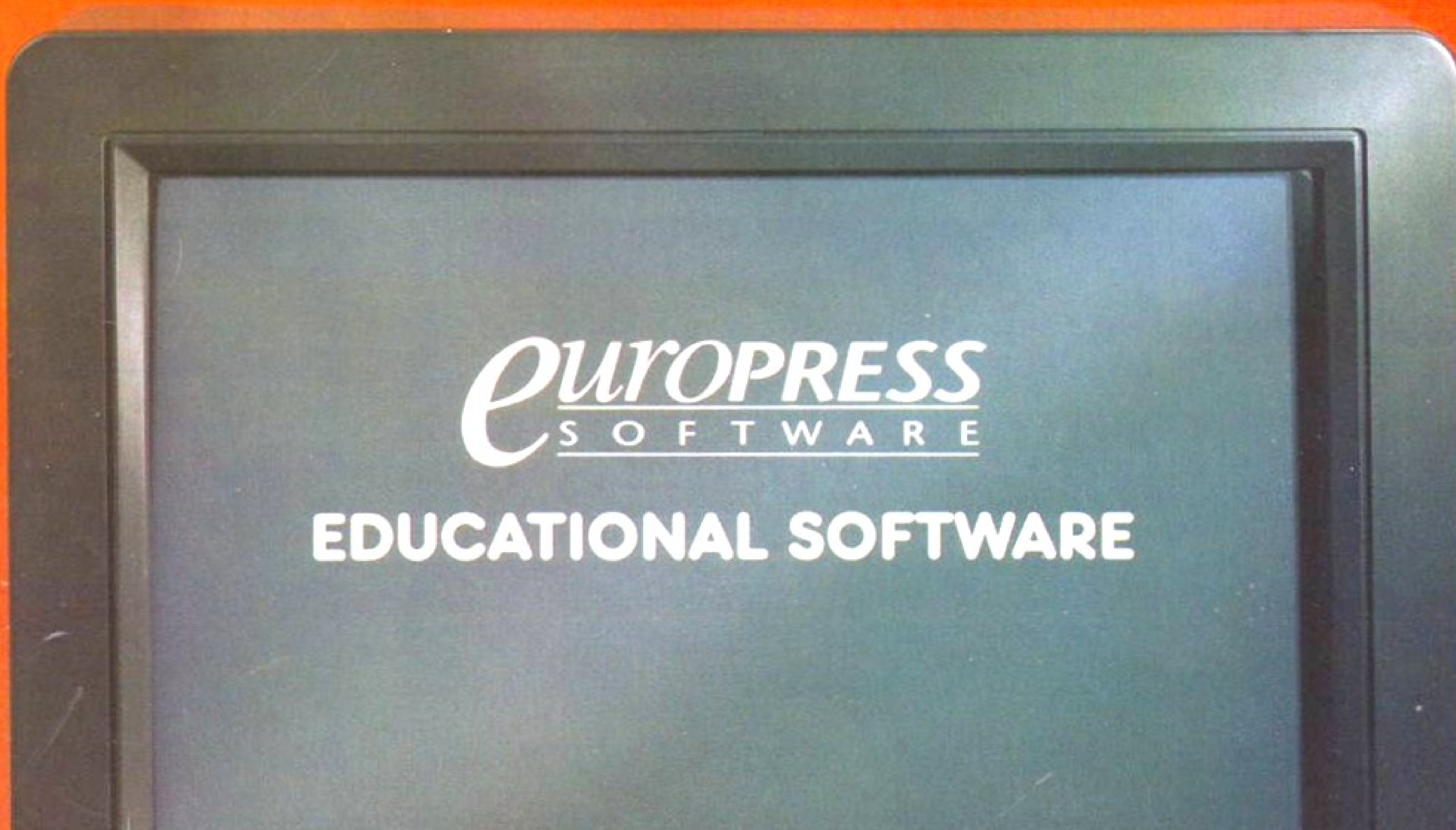
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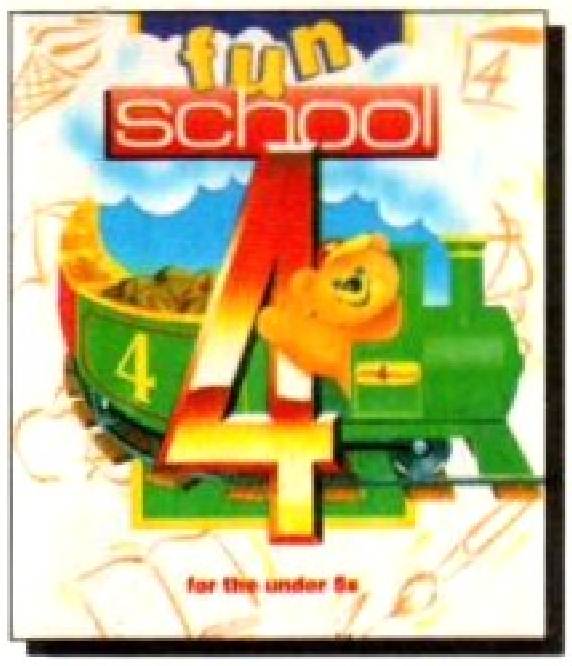
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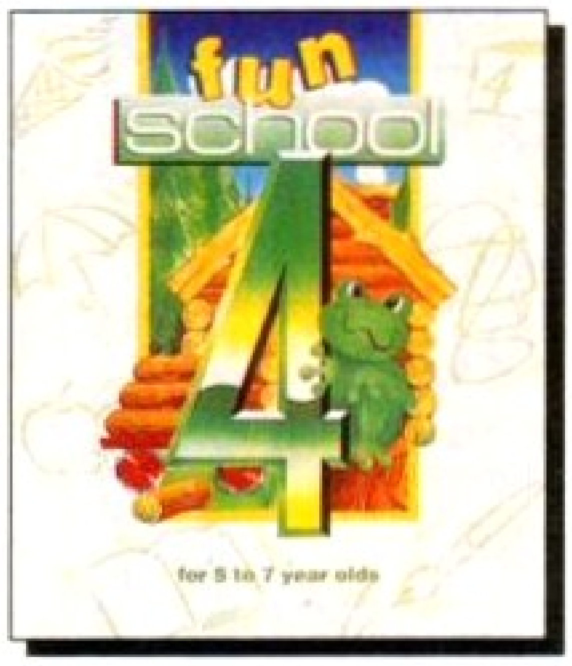
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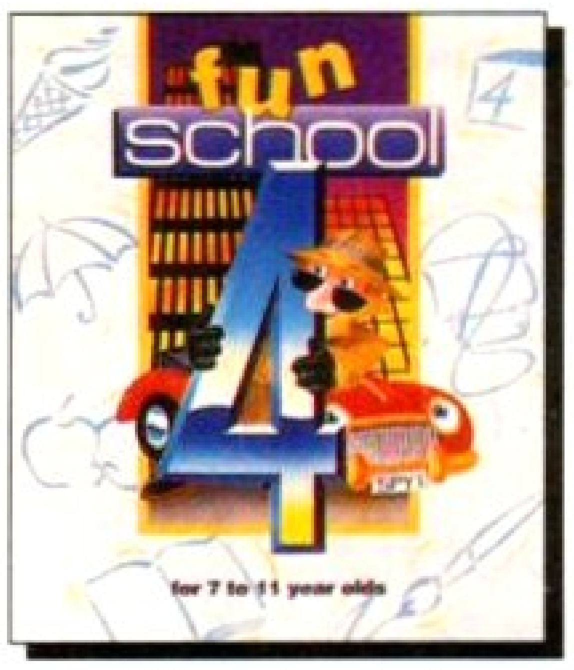




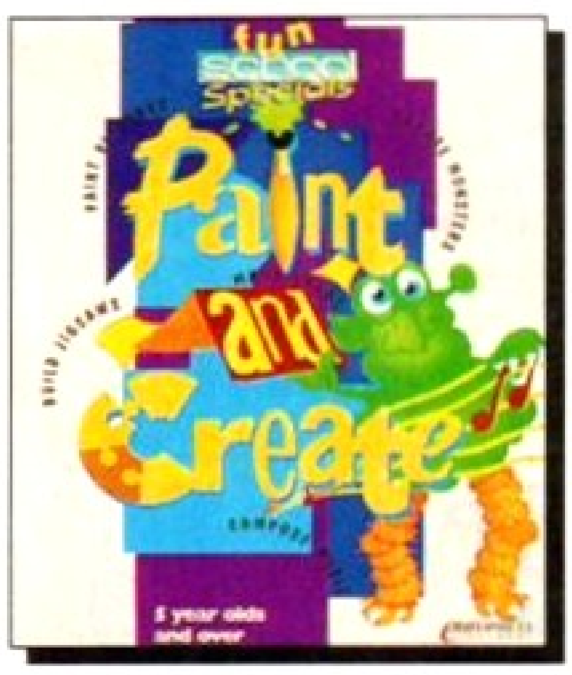
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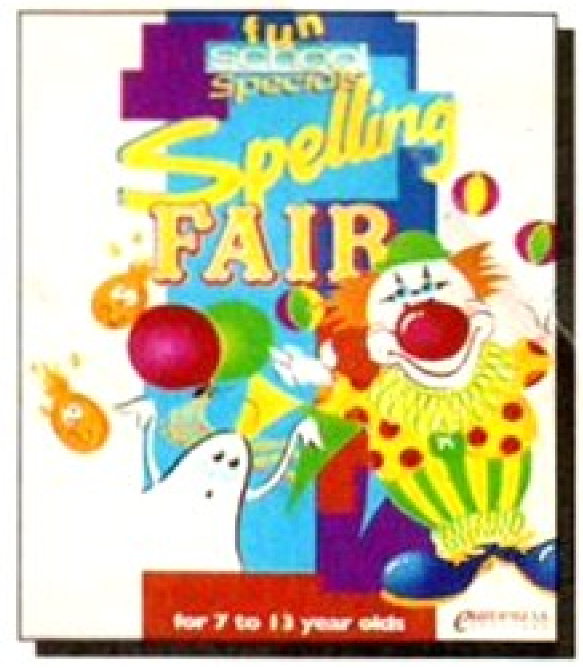
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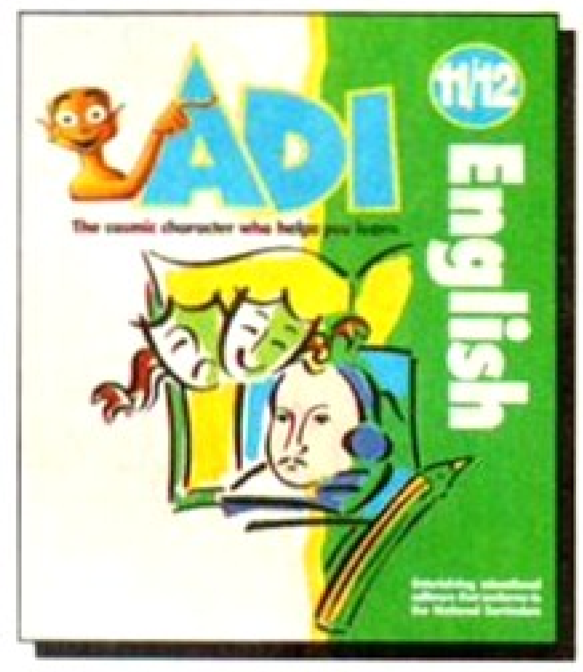
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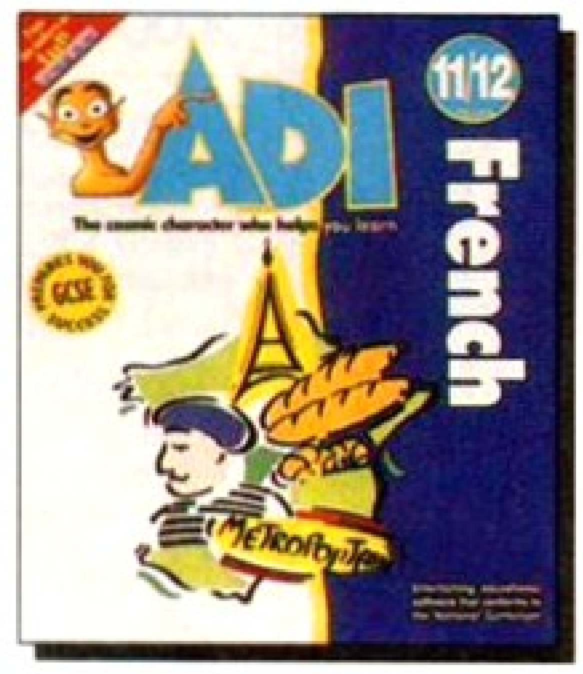
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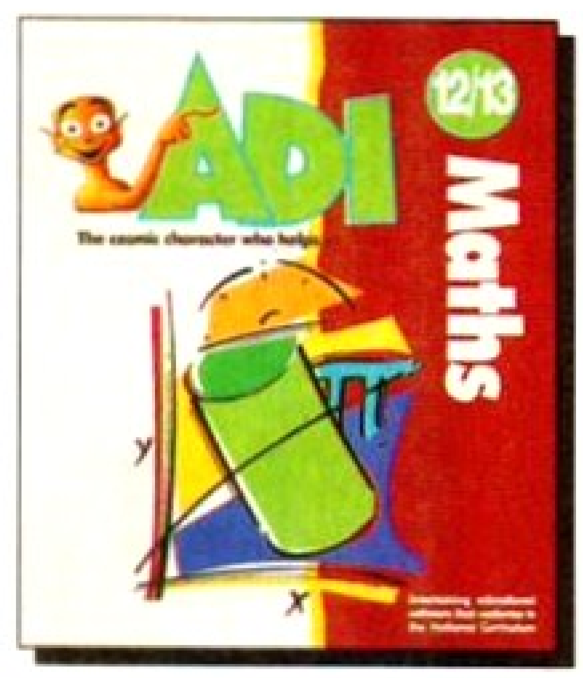
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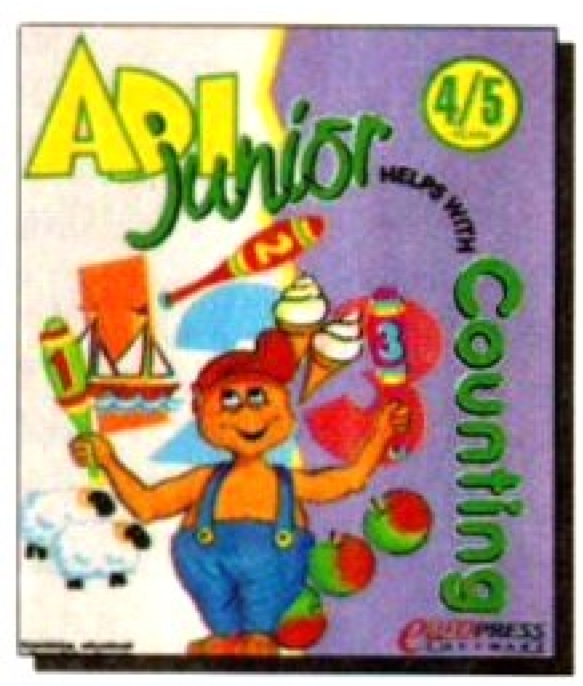
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AMIGA Verdict FORMAT

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Multimedia
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Innovation rules the roost, here. Microdeal have not only come up with the Amiga's first 16-bit sound sampler in the form of *Clarity 16* (due for release very soon), but have also created the first-ever combined sound sampler and video digitiser. So what does this bizarre combo have to offer? Find out on... **Page 136**

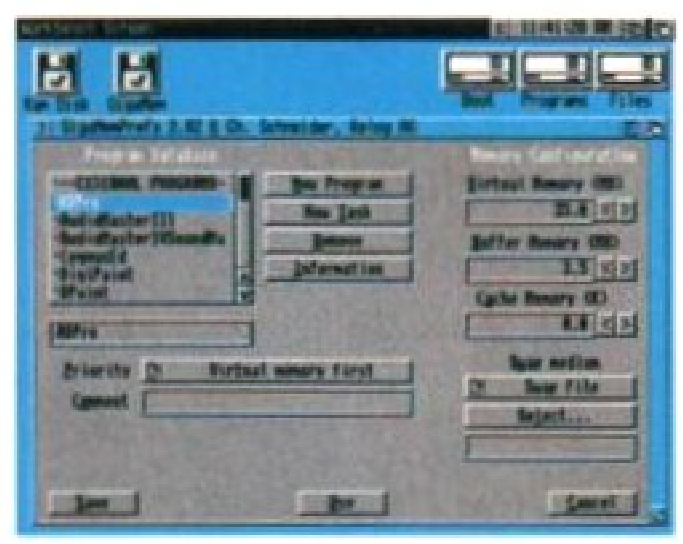


Music
BOOM BOX

And here's another very original idea. Just because you have no real musical talent, that shouldn't prevent you from having a bash. Not when the Amiga makes it so easy. Dr T's have come up with a great intro to music for beginners and youngsters in the form of a play-along music creator that sets the backing tracks and lets you do the rest. **Page 140**

Let's get serious!

Neil Jackson sets out the bill of fare for the 'serious product reviews'. Be sure to look out for an exciting new printer idea and a new program for star gazing…



Memory
GIGAMEM

So you thought that all the advantages of extra processing speed were only for the wealthy who could afford accelerator cards, did you? Here's a new piece of software that provides the Amiga with all the advantages of 'virtual memory' – it's like having lots of extra RAM even if you don't. Discover its advantages on... **Page 144**

Graphics
IMAGINE GUIDE

We've discovered that there's no computer to compare with the Amiga when it comes to 3D ray-tracing. Possibly the best 3D package to date is *Imagine*, but it can be difficult to get the best out of the program until you know your way around it. So what could be better than this excellent book to be your guide? **Page 146**

Graphics
REAL THINGS: DOGS

Deluxe Paint puts animation at your fingertips, so we're told. All very well, but suppose you've never tried animation before? Suppose you're not very good at drawing? To the rescue comes the *Real Things* series, with animated 'clip art', this time based around the ever-popular domestic theme of canines. **Page 146**



Printers
OKI LCD PRINTER

'What's an LCD printer?' you might well ask. Well, in quality and in price it's very similar to a laser printer, though the way it works is somewhat different. This is the first example of this kind of printer we've ever tested, and the results are surprisingly excellent. We put it to the ultimate test on... **Page 148**



DTP
THE PUBLISHER

Desktop publishing is one of the most satisfying things you can do with your Amiga and, fortunately for you, there's a number of companies that are competing for your money and producing excellent DTP software. This latest arrival from The Disc Company promises remarkable value, but how does it perform? **Page 150**



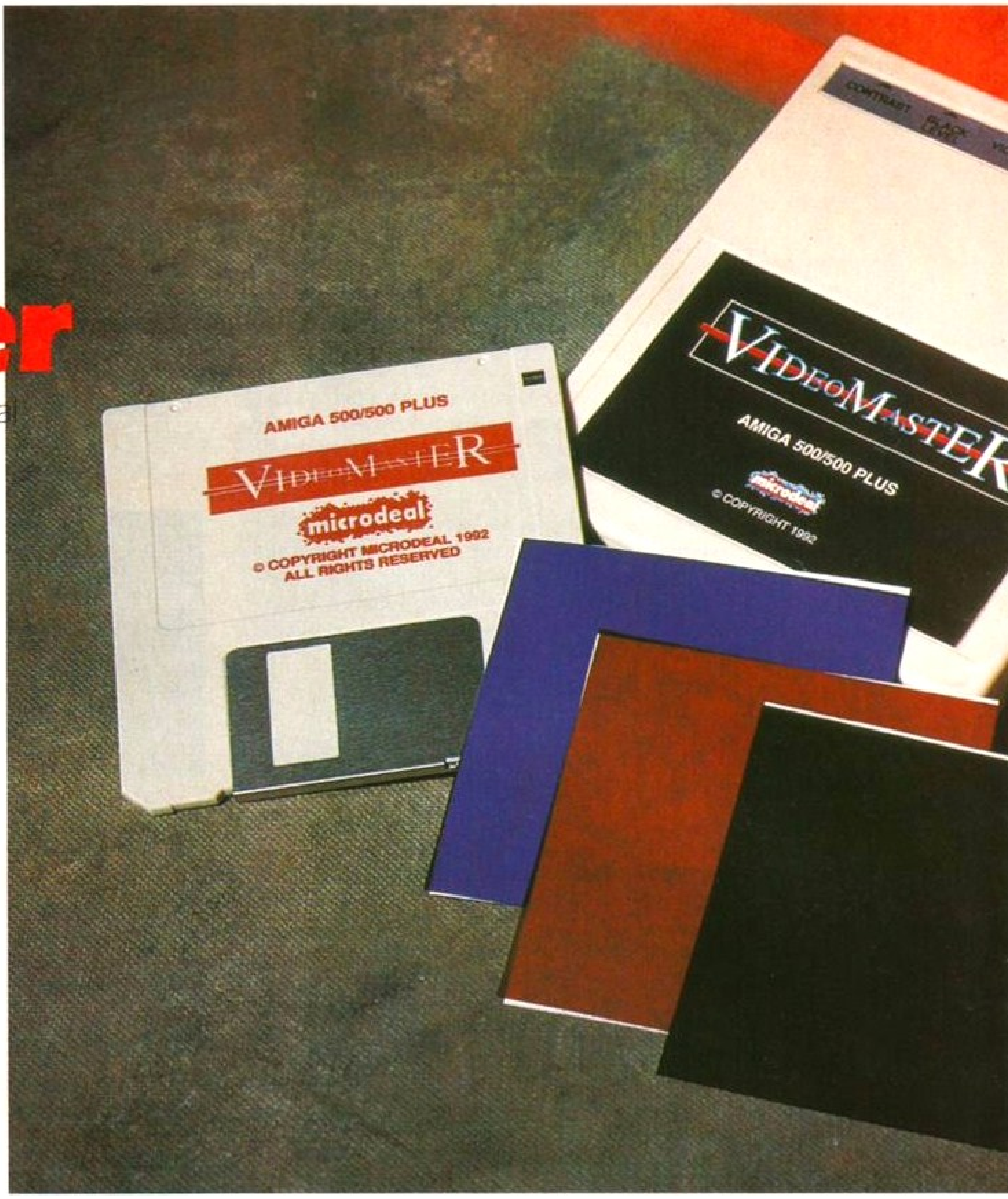
Astronomy
DISTANT SUNS AND VOYAGER

Astronomy isn't one of the hobbies that you would normally think of as going hand in hand with computing and your Amiga. But think again, because here are two remarkable programs – one brand new, one updated – that will help you explore the wonders and mysteries of the night skies. There's a whole universe happening now and is waiting on... **Page 156**

Do you need a video digitiser? How about a sound sampler as well? Why buy them separately when you can have them both in one box! **Jason Holborn** puts Microdeal's latest combination to the test...

VideoMaster

£69.95 ■ Video digitiser and sampler ■ Microdeal



VIDEOMASTER is available from Microdeal 0726 68020

VideoMaster is a combi' digitiser and sampler. For under £70 you get your very own mini-multimedia workstation.

WHILE SOME HARDWARE developers choose to diversify into different fields, others stick to doing exactly what they're best at. Take Microdeal, for example. They have been at the leading edge of Amiga sound products for several years now and their range of Amiga sound samplers is now second to none.

Yet sticking to what you do best doesn't necessarily mean you have to stagnate. Microdeal are on the verge of a whole set of innovative new products, not the least among which is Clarity 16, the first 16-bit high-quality sound sampler for the Amiga. We expected that we might be able to review it this issue, but a full review will hopefully appear in next month's magazine.

And the innovation continues with VideoMaster, the first ever piece of electronic wizardry to offer you the capacity to digitise both graphics and sound. It's an odd idea but one that makes good sense. Let's see how it performs under test...

One of Microdeal's most popular samplers to date has to be Amas 2, a combined sound sampler and MIDI interface in one compact (and almost bijou) box.

Although there are plenty of better sound samplers available on the market (RamScan's Audio Engineer, to name just one), no other sampler even comes close to Amas 2 in terms of giving the buyer value for money. Offering full-stereo sampling and MIDI compatibility to boot, Amas 2 continues to prove popular among Amiga musicians. Rumour has it that even pop idol Paula Abdul uses an Amiga that is equipped with an Amas sampler!

Spotting another obvious gap in the market, Microdeal have now opted for the 'combi' approach once again with the launch of their VideoMaster, a low-cost video digitiser and sound sampler for both the A500 and A500 Plus. Unlike any previous MicroDeal products, VideoMaster connects to the A500's 86-pin bus connector (the same connector that is used for hard drives) so I'm afraid the rest of us are out in the cold until MicroDeal choose to release a version that can be used on the rest of the Amiga range. A version for both the 2000 and 3000 is at the planning stage, but don't hold your breath.

The thing that makes VideoMaster so special, though, isn't the fact that it boasts both a digitiser and a sound sampler in one box. Certainly most other companies would have simply marketed the product as a low-cost method of obtaining two extra add ons for your Amiga, but not Microdeal.

Instead they have cleverly managed to seamlessly tie the two products together and create a sort of 'integrated environment' for working with both sound and pictures simultaneously – you can more or less think of it as a mini-multimedia workstation, if you like. In effect, this is exactly what it is. When you think of the Amiga's obvious strengths in the multimedia market, it really comes as something of a surprise that no one has thought of bringing out such a combination before. Oh well, I suppose someone had to be first, and Microdeal are there.

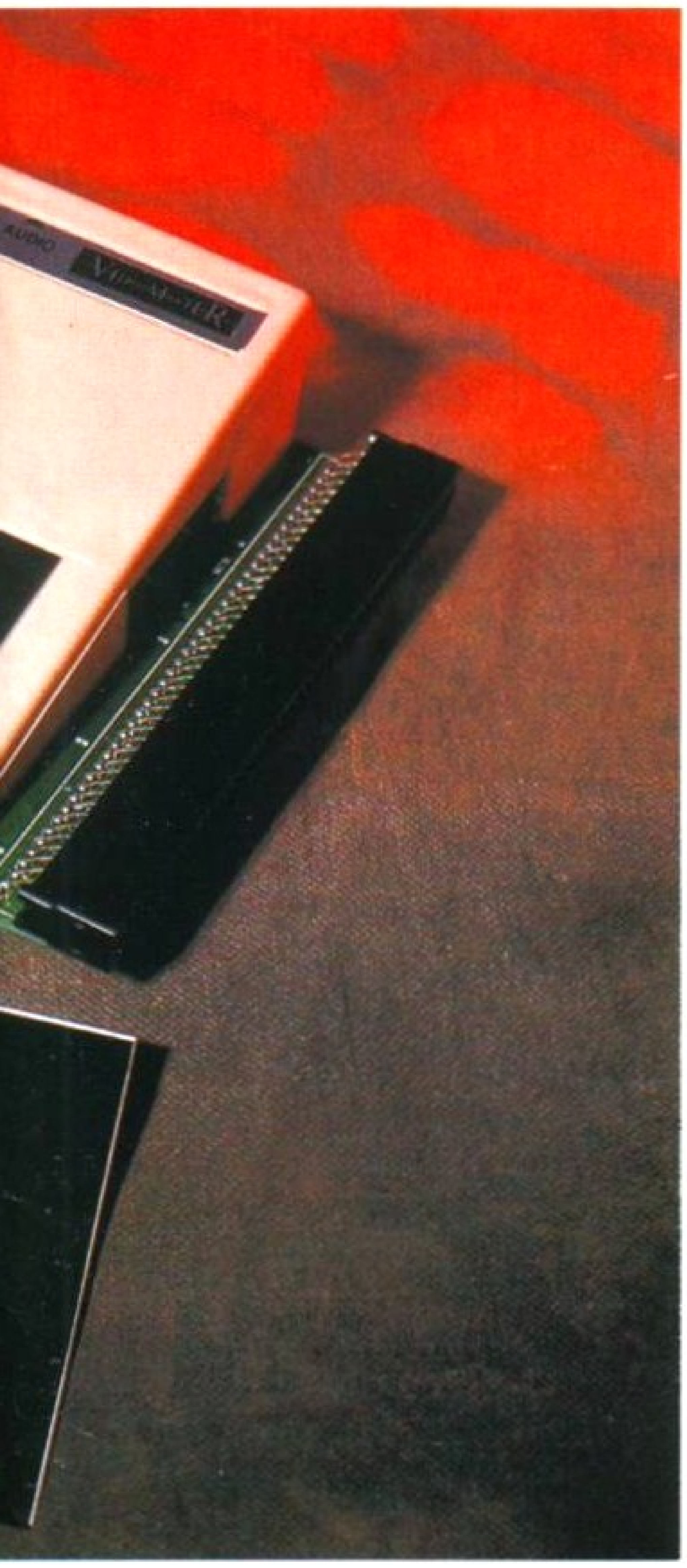
It is fairly easy to set up VideoMaster, because once you've lodged its cartridge into the A500's bus connector, then you're ready to boot up the VideoMaster software and start digitising both sound and pictures.

The program is basically split into three different sections – there are two panels for controlling the video digitiser and sound sampler, and then there's a very powerful video sequencer which enables you to create your own multimedia movies, comprising sampled sound and animated frames. The VideoMaster digitiser is a real-time mono affair that can grab a series of frames from any composite video source. The digitiser operates in two modes – either quarter screen or full screen.

Although full screen is perhaps the most useful of the two modes, quarter screen is far more practical simply because it enables VideoMaster to capture frames at a much higher rate – 25 frames per second as opposed to around four frames in full-screen modes. You will find that grabbing at 25 frames per second eats up RAM pretty quickly, but it produces some really impressive results.

Frame update can also be slowed right down using VideoMaster's very useful Time Lapse feature. Time Lapse can be used to grab a series of frames at specified intervals (one every two hours, for example). This can be particularly useful when digitising very slow-moving objects. VideoMaster can also capture single full-colour frames in one of two ways – using an RGB splitter or by placing a set of coloured filters (these are included) in front of a video camera (preferably black and white).

Like Rombo's Vidi-Amiga, VideoMaster stores each and every frame that it grabs into memory, forming a sort of digitised animation. Using VideoMaster's frame editor (which displays a series of five frames in miniature), you can then cut out and insert new frames with ease, enabling you to modify your animation to suit your needs. Several of these 'mini-



movies' can then be tied together to form a sort of digitised film.

You've got your video footage, all that now remains is to grab some sound effects to add atmosphere to your movie. VideoMaster comes complete with a fairly good quality sound sampler that can sample a mono sound signal at up to 16 KHz. OK, the sampling rate is nothing special, but then you have to remember that sound samples do eat up a lot of RAM, so the last thing that you want is a huge sample eating up all your Amiga's memory if you also want to display a complex animation.

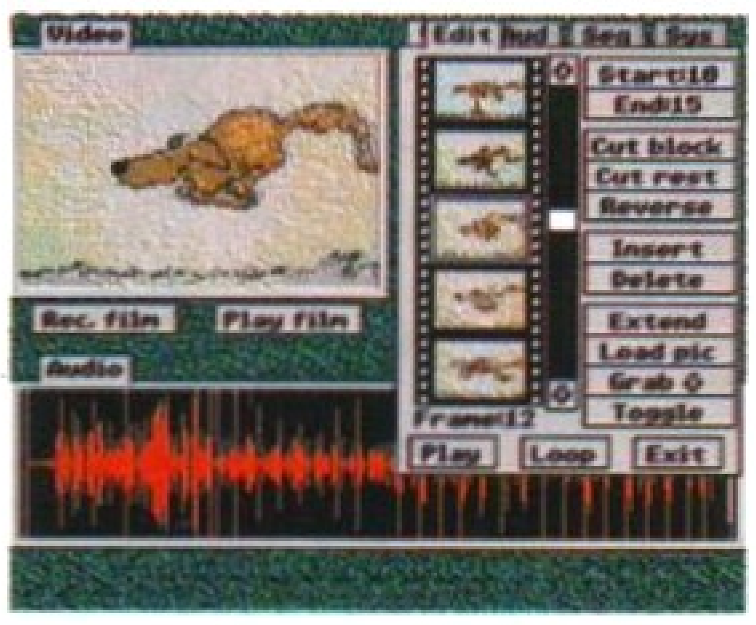
To be fair, the sound quality is pretty high, especially when you consider the relatively low sampling rate. One minor gripe that I do have, though, is the quality of sample editing – to call it basic would be an understatement!

Once you've got both your video footage and your samples, you can tie them together using VideoMaster's video sequencer. This is a bit like the sample sequencer built into MicroDeal's *StereoMaster*, but for one big difference – this sequencer can also handle digitised animations. Your 'film' can be built up from any number of video 'clips' simply by assigning each 'clip' to a key on the Amiga's keyboard. Then click on the 'Record' gadget

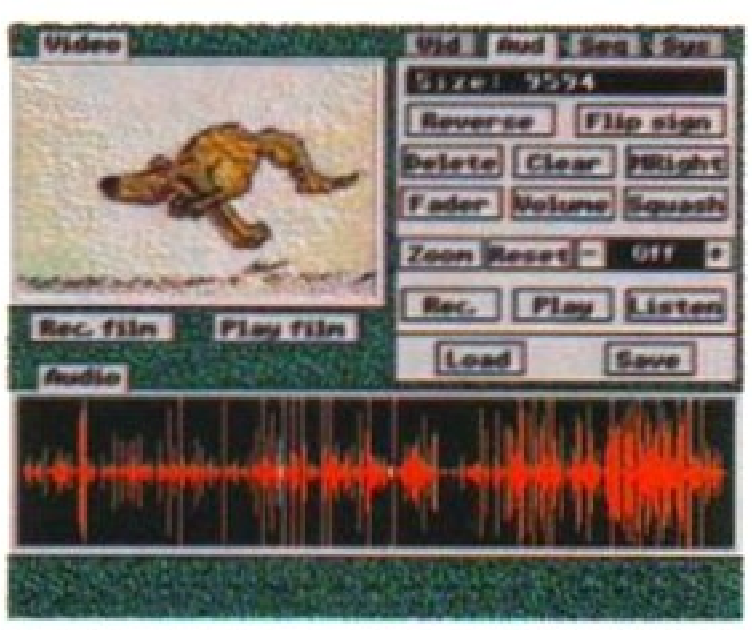
VIDEOMASTER AT A GLANCE



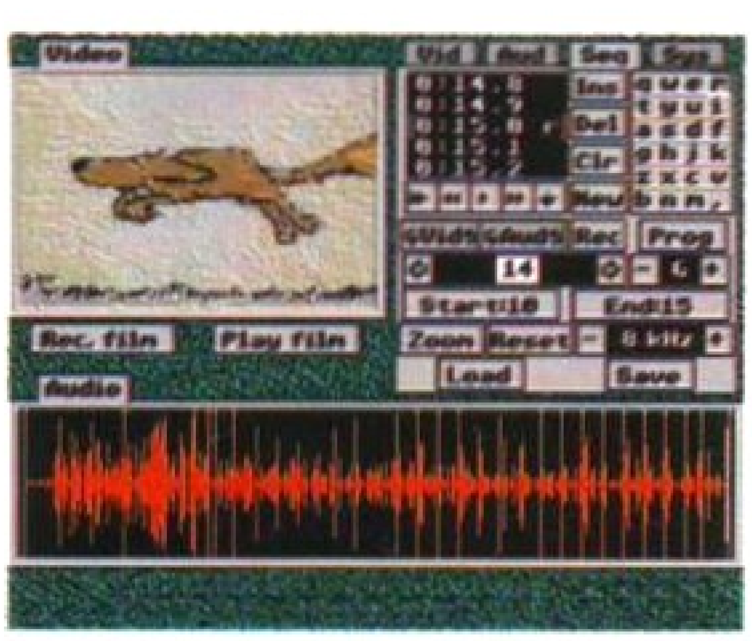
VideoMaster's digitiser is a fairly capable beast that can grab quarter screen images at rates of up to 25 frames per second. Obviously the number of frames that you can grab is restricted by memory, so it's best to use a lower frame-grabbing speed if memory is a little tight. On an 8Mb Amiga, it's actually possible to grab over 1,000 of these frames (grabbed at 25 frames per second, that translates to 40 seconds of full-motion video!).



The video frame editor is used to remove or insert frames into a video clip grabbed using VideoMaster's digitiser. Each frame within the clip can have its own colour palette, so it's perfectly possible to load and use an IFF image from disk. Small sections of clip can also be isolated by grouping them into a block and then clicking on the 'Cut Rest' option. Alternatively, blocks can also be removed using the 'Cut Block' option.



Although the maximum audio sampling rate offered by VideoMaster is restricted to just 16 KHz, the sound quality is surprisingly high. If you already own a sound sampler, VideoMaster can use this instead. All your samples are recorded into a single massive audio buffer with each sample separated from the rest by a set of two pointers that designate the start and ending points for the sample. Editing is a little basic though, so you may want to port your samples into a dedicated sample editing program for more comprehensive editing.



Finally we have the sequencer, which is the fun bit of VideoMaster. This enables you to construct your own films comprising video clips and sampled sounds. Constructing a sequence is a little like using a MIDI sequencer. All you have to do is to assign each event (which can be either a video clip or a sample) to a key, click on 'Record' and then tap the appropriate key when you want the event to be played.

and VideoMaster records any key depressions in real-time. By tapping the same key in rapid succession, it's also possible to produce an impressive video 'stuttering' effect.

Samples are added to your film in exactly the same way. Each sample is assigned to a key and then you simply record the sequence again, pressing the sound keys to record the sample events into your sequence. If real-time recording is not accurate enough for you, then you can also add keyboard events in step-time mode using the sequencer's 'Insert' option. OK, it does sound pretty haphazard, but you'd be surprised to find just how easy it is to get some really impressive results. If you want to share your creations with your friends, MicroDeal kindly supply a standalone player program which can play your films from a separate disk.

There's no doubt that using VideoMaster is tremendous fun, but I can't help thinking that this is perhaps its only use – as a novelty rather than a serious tool for graphics, music or even multimedia work.

The full motion quarter screen-grabbing option could prove useful for CDTV developers though, because it provides an easy method of producing video footage suitable for CDXL (the CDTV's attempt at full-motion video). The sound sampler section isn't too bad either, but VideoMaster really is rather let down by the quality of its full-screen digitising. Although quarter screen grabs are full of detail, full-screen grabs seem washed out.

I keep on wanting to compare VideoMaster to standalone digitisers and sound samplers such as Vidi and even Microdeal's own Amas 2, but this isn't a particularly fair comparison to make simply because of the price difference between VideoMaster and the competition (the two products mentioned above would set you back £200!).

VideoMaster still represents astoundingly good value for money, though. Let's face it, what else can you buy these days for just £70? Sure, you could buy three games, but I can assure you that you'll have far more fun with VideoMaster! If your digitising needs aren't too serious, then you'll find VideoMaster is well worth investigating.

VideoMaster

SPEED ●●●●
Grabbing and editing options are performed at a lightning-fast rate.

DOCUMENTATION ●●●
Although visually nothing special, the VideoMaster manual is quite readable.

ACCESSIBILITY ●●●●●
Plug it in, connect a sound and video source and you're away - it really is that simple.

FEATURES ●●●
Doesn't pose a threat to dedicated samplers and digitisers, but it's a capable system.

VALUE ●●●●●
Only £70 for a sound sampler and a digitiser can't be sniffed at.

Verdict 85%

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The main *Boom Box* screen, which is used to play the pre-recorded tracks and adjust each volume using the sliders.

If you want to create your own hip-hop, dance or rave music, but you don't think you have the talent, **Andy Nuttall** may have just the thing...

Boom Box

£39.95 ■ Music software ■ Dr T's

WHETHER YOU ALREADY own an Amiga or not, it's likely that you already know about its musical power. Not only is it becoming the choice of MIDI musicians everywhere, it also has the capability of playing samples without any external hardware.

It is this latter point that Dr T's have exploited with their latest program, *Boom Box*. The developers, who are already renowned for their excellent MIDI sequencer *KCS 3.5* and patch editor *X-oR*, are aiming their new product at a market full of would-be musicians who have no previous experience with computer music, but have got an Amiga and they know it's capable of making a decent noise.

The idea is that *Boom Box just* provides a backbeat while you alter the mix of the music and simply have a jam by using internal Amiga samples. You are provided with seven different backbeats, each with differing musical styles such as hip-hop and rave. Each one consists of three separate tracks for drums, bass and melody, while a fourth track is left open so you can play the samples over the top.

Boom Box is controlled via one of three different function screens, Playback, Remix and Jam. The Playback screen acts in a similar way to a ghetto-blaster style tape player, with controls such as play, pause, fast-forward and rewind. Here you can also adjust the volume level of each track separately to set the 'feel' of the piece of music you're trying to create.

The Remix screen enables you to alter the mix of a backbeat, by using your mouse to move the volume sliders corresponding to each of the four tracks. At the same time, pressing keys 1 to 6 triggers an IFF (internal) sample stored in memory.

The six can be chosen from the 50 different which are provided, or if you own a sampler you may use your own. The samples included are pretty varied – from hip-hop style drum machines to the obligatory James Brown vocals. You can also alter the tempo of the music, and add in effects such as pitch shift, echo and repeated loops.

The Jam screen is similar to Remix, except that here you can change the current pattern by clicking on one of the style buttons at the bottom of the screen. Four different drum styles are provided for each backbeat, along with four bass and four melody lines. If these are selected during recording, the new pattern will play at the start of the next bar. Using this method you can change the feel of the music as it plays, creating an entire song easily and quickly.

***Boom Box* achieves** its objectives because it enables you to begin playing and mixing as soon as you load it up, and it's simple and great fun to use. It does have some limitations, however, which could have been made better.

The main niggle is that you can't create your own patterns of music, so you're stuck with the patterns provided. Of course, it doesn't claim to be a sequencer, so it would be unfair of us to mark it down because of this, but some kind of pattern-creating routines wouldn't have gone amiss. Having said that, there are enough patterns built-in to keep you going for a while – and there is scope for add-on disks in the future should this package prove to be popular.

The other minor point is that the timing will occasionally go awry when you try to jam along with too many samples. This is a bad point, but it shouldn't happen too often.

This is an excellent introduction to making computer music, as control is easy and it's not at all technical. Any parents who have kids that are into hip-hop, techno or rave music could do worse than buy them this package. OK, maybe it won't teach them to play the piano, and they won't use it to make a hit record, but they might find it a useful stepping stone to greater things.

BOOM BOX is available from Zone Distribution 071-733 8444

NEEDS 1 MEG



The Jam screen, where you can remix the tracks, changing the bassline, rhythm and top end, while jamming along using the samples provided.

Boom Box

SPEED ●●●
Generally quick and responsive, but it can occasionally slip out of time.

DOCUMENTATION ●●●
A reasonable manual containing both Amiga and PC instructions – but only PC screenshots.

ACCESSIBILITY ●●●●●
Very easy to get into, clearly presented and great fun to use.

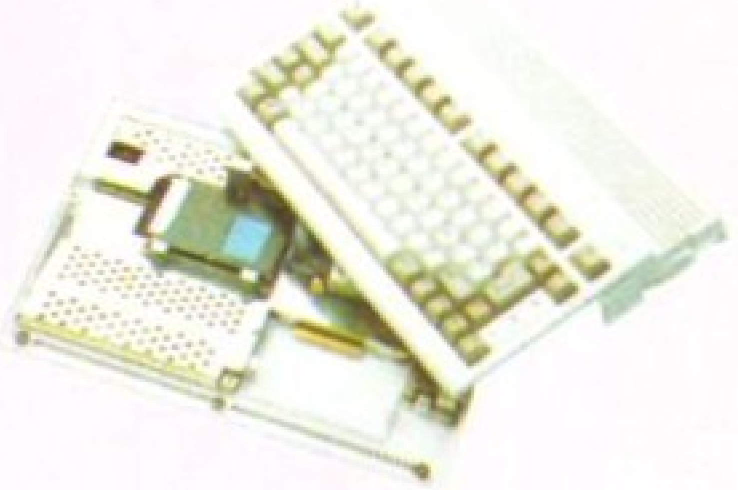
FEATURES ●●●●
The patterns and samples provided are good, and the options are well thought-out.

VALUE ●●●●
An excellent package, well worth getting for hip-hop fans, but marginally overpriced.

Verdict **80%**

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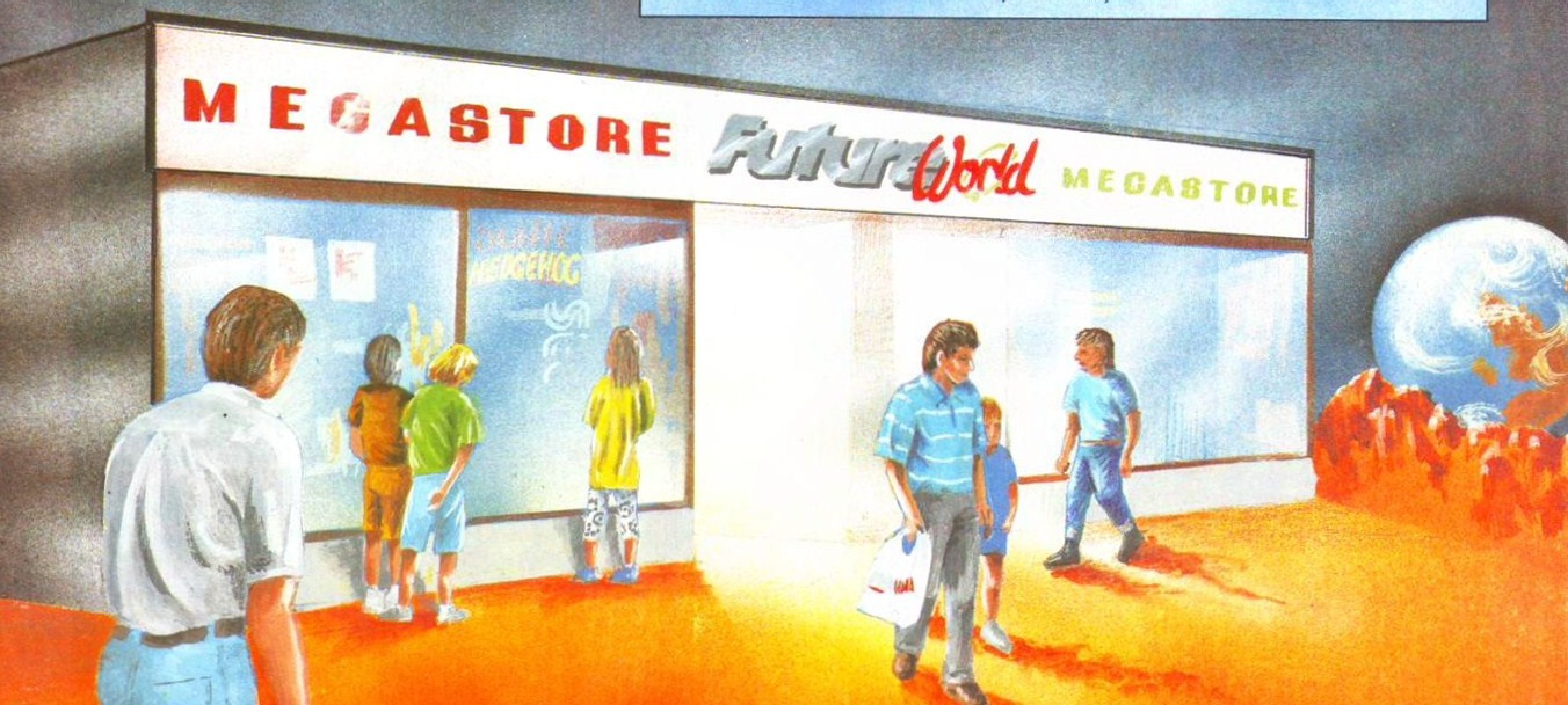
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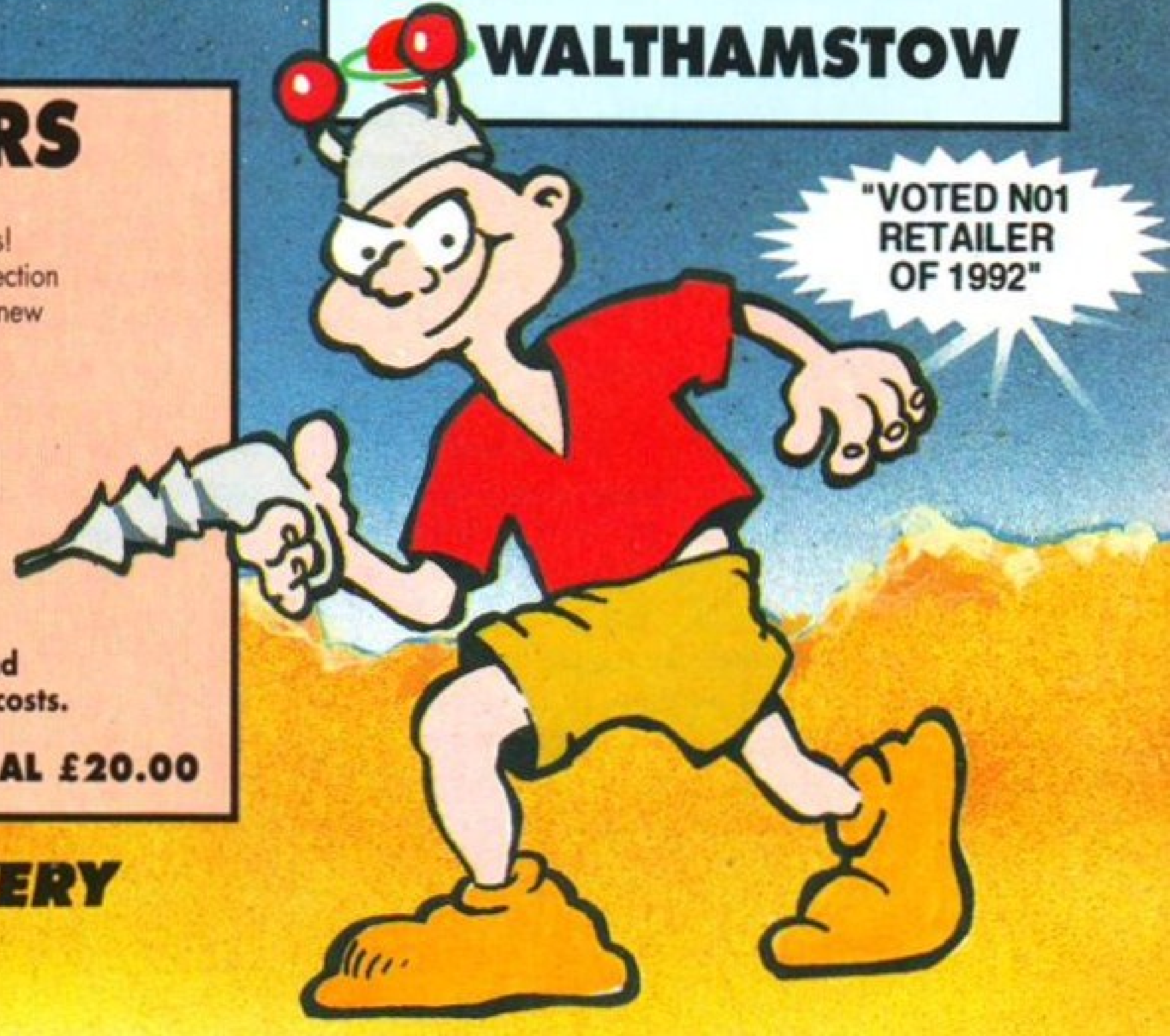
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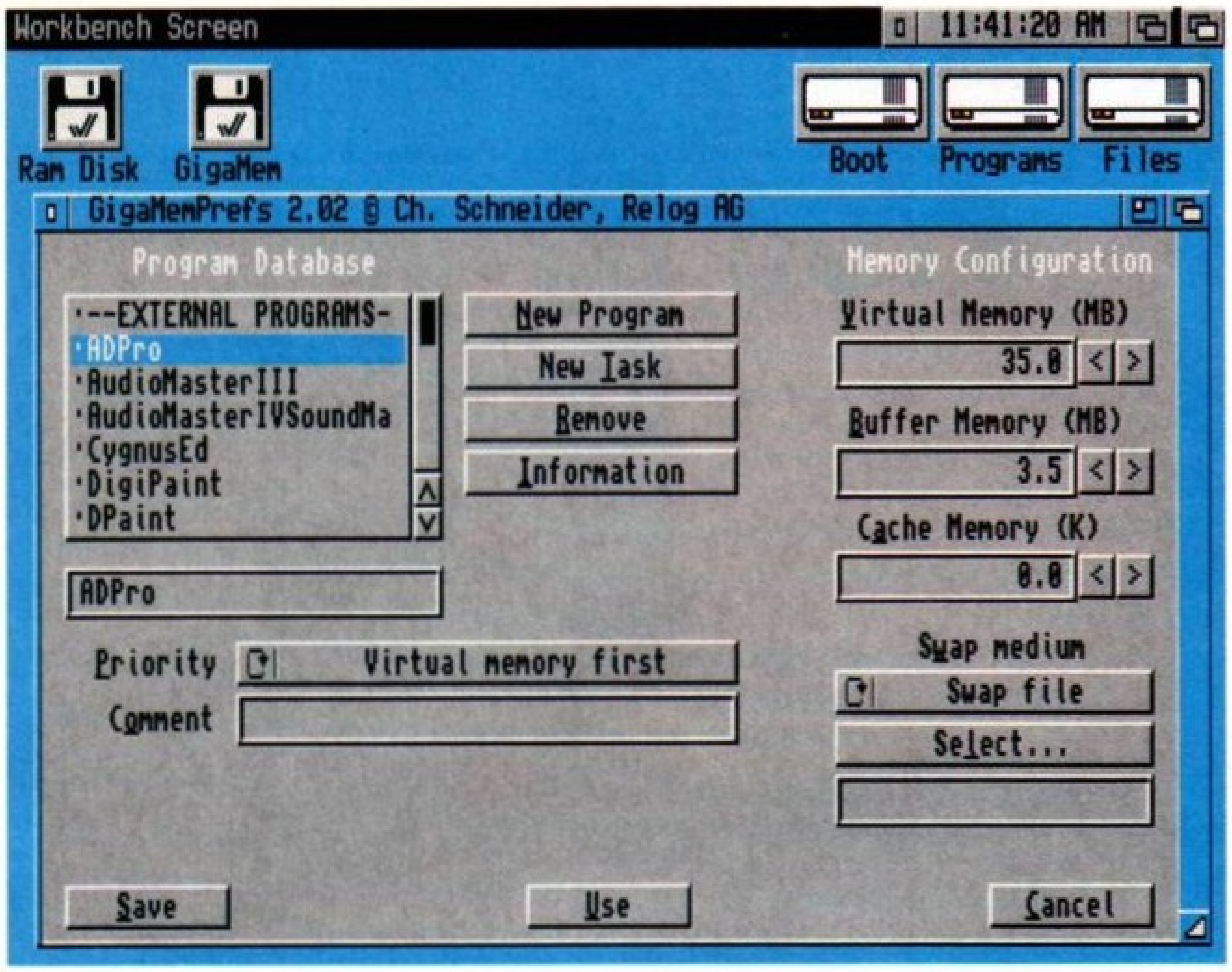
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"VOTED N01 RETAILER OF 1992"



Jason Holborn examines a program that claims to add hundreds of gigabytes of memory to your Amiga...

GIGAMEM is available from HB Marketing 0753 686000

The *GigaMem* Preferences program gives you extensive control over your 'virtual memory' – a clever technique that enables your hard drive to pretend it's actually RAM.

GigaMem

£TBA ■ Virtual memory software ■ HB Marketing

BACK IN THE days when 8-bit micros roamed the Earth, the memory capacity of your microcomputer was often measured in terms of kilobytes rather than megabytes. Back then, most of us were more used to 64K, 48K or even measly 32K micros – a machine with anything more than this was considered to be a real powerhouse!

In these days of 24-bit graphics and 16-bit sound sampling, though, a machine with less than 2Mb of RAM is considered almost unusable! I'm lucky enough to own a machine equipped with a full 9Mb of RAM, but even this elephant-like memory capacity is often not enough for sophisticated applications.

So what do you do when memory problems start to occur? The obvious answer would be to add more memory to your system in the form of RAM chips. This is all well and good providing that you have both an accelerated Amiga that is capable of being expanded beyond the Amiga's self-imposed 10 Mb memory limit and your pocket can take the strain (32-bit RAM chips don't come cheap).

Believe it or not though, there is a way of getting around this problem without having to dish out megabucks – all you need is a hard disk, an accelerated Amiga equipped with an MMU (Memory Management Unit) and a copy of *GigaMem*, the Amiga's first virtual-memory system.

Virtual memory is a very clever software technique that attempts to fool your Amiga into thinking that it has more memory than is actually installed inside your machine. The data which the Amiga attempts to store in this 'fake' memory is in fact held on your hard disk. Using some very clever buffering, data is transported to and from the hard disk whenever it is needed by the application that created that data. Although this obviously results in a slow-down in the system performance, it's a small price to pay for all those extra megabytes of memory.

The amount of virtual RAM that you can access is limited only by the capacity of your hard disk, although it's unlikely you'll ever need more than a 100 Mb. *GigaMem* is capable of handling up to one gigabyte of virtual RAM (that's 1,024 Mb!) so it's very unlikely that you'll ever feel held back.

Like most virtual memory systems, *GigaMem* won't work unless you own a fairly powerful computer. Even if you own a machine equipped with a processor accelerator, *GigaMem* won't run unless the card is equipped with a memory management unit (MMU). Both the 68030 and the '040 have these built in as standard, so A3000 and A4000 owners have nothing to worry about.

Another very important addition is a pretty substantial (and fast) hard disk. Unlike programs of this kind on other systems, *GigaMem* doesn't insist that you set aside a partition of your hard drive for the virtual RAM, so there's no need to reformat your existing drive. Personally, though, I would recommend such a practice simply because it offers far more security just in case something does go wrong – losing the contents of your virtual RAM won't be too much of a loss, but you'll kick yourself if your hard drive gets wiped! To be fair though, *GigaMem has* performed faultlessly while it has been installed on my A3000.

With all that virtual RAM at your disposal, it's now perfectly possible to run several large tasks concurrently. You could, for example, run a hand scanner at 400 dpi, process 24-bit graphics in *Art Department Professional*, digitise sound at 52KHz and build up a minute-long animation within *DPaint*, all without running out of memory. In practice this isn't always the case though.

What you must consider is that virtual RAM is treated as fast RAM, so any program that relies solely on chip RAM will not be able to take advantage of *GigaMem*. Thankfully most modern graphics and music programs are not held back by the chip RAM limitation, so you'll probably only encounter this problem with older programs.

***GigaMem* most certainly** isn't the answer to every Amiga owner's RAM-shortage problems. Most of us encounter these problems sooner or later, but *GigaMem* won't be of use to you unless you're lucky enough to own a machine that is capable of handling it. Thankfully the price of processor cards equipped with memory-management units is starting to fall dramatically (especially now that Commodore have released the A1200 and dropped the price on the A3000), so the sort of hardware that is required to run *GigaMem* is no longer the sort of pie-in-the-sky stuff that it was two years ago.

If you have got a machine that is capable of running *GigaMem* and you've got plenty of space available on your hard drive, then *GigaMem* may well be the answer to all your RAM shortage problems. Although software solutions such as this will never really perform as well as a dedicated RAM expansion, *GigaMem* represents a very good alternative. One thing's for sure – *GigaMem* will definitely be staying on my hard drive.

GigaMem

SPEED ●●●●
Considering the complexities of virtual memory, it has very acceptable performance figures.

DOCUMENTATION ●●
The *GigaMem* manual could probably benefit from some more in-depth explanations.

ACCESSIBILITY ●
How many Amiga users own an accelerated Amiga with a memory-management unit?

FEATURES ●●●●
For what should be a minimal price, *GigaMem* can add a Gigabyte of RAM to your system.

VALUE ●●●
Considering the high cost of RAM chips, *GigaMem* offers a very good alternative.

Amiga Format Verdict **78%**

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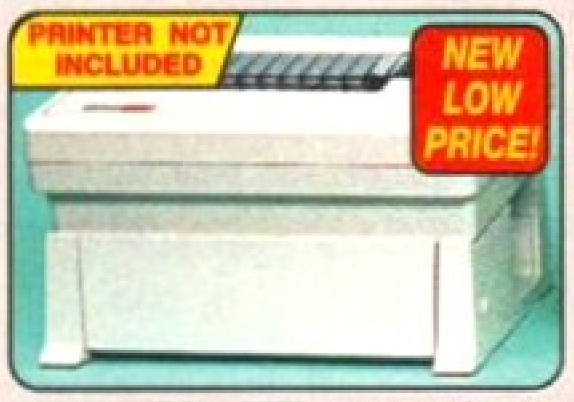
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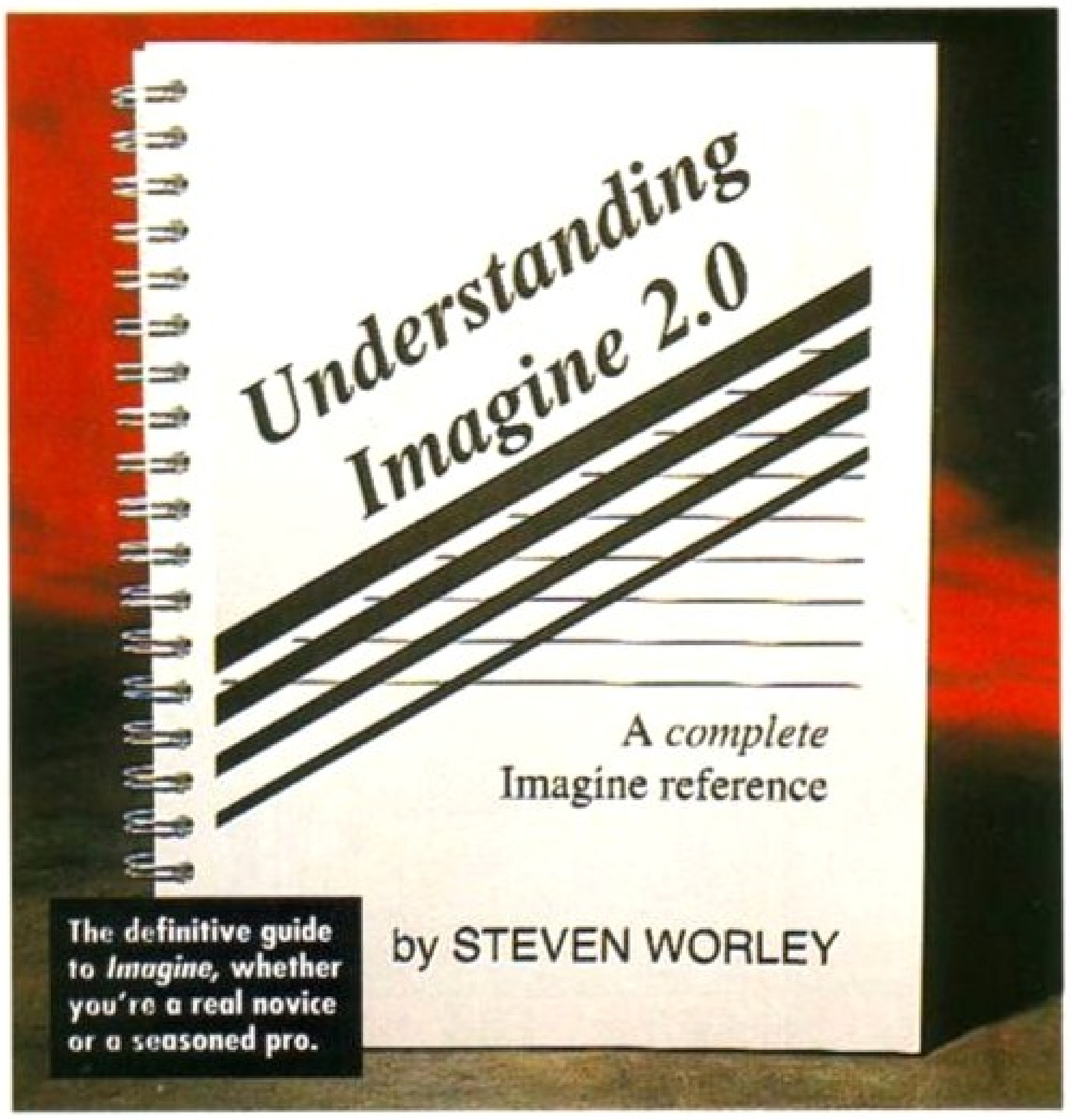
Understanding Imagine 2.0

Reference Book ■ £15.95 ■ Alternative Image (0533 440041)

BRILLIANT AS *IMAGINE 2.0* may be as a 3D modelling and rendering system, there are a lot of people who don't realise this because they just cannot get to grips with the program. The complexity of the interface and the huge range of functions and options make it one of the densest packages to learn on the Amiga.

The problem is not exactly helped by the manuals that Impulse have managed to provide to go with the two versions of the programs. The first is so minimal that not all the features are even mentioned, let alone explained. Dedicated users could have hours, days, months of fun trying to fathom things just by trial and error – which is perhaps the best way to learn, but painfully slow and frustrating nonetheless.

The second manual goes to the other extreme and is so dense a tutorial that dipping in for reference is almost impossible. Luckily for *Imagine 2* users, Steven Worling has produced a new reference book – *Understanding Imagine 2.0* – and it is not only by far the easiest way to learn the system, but also one of the best manuals available for any 3D program.



The definitive guide to *Imagine*, whether you're a real novice or a seasoned pro.

The book steadily works its way through each of *Imagine*'s powerful editors, explaining every function and quirk, solving likely problems and concentrating extra effort on the most difficult or special aspects of the system. The style is easy and chatty but precise and informative at the same time. No stone is left unturned. Even after four years of using Impulse products from *Turbo Silver* onwards, and two years of effort on *Imagine*, I learned something new on almost every page!

At the end of the 'manual' proper are 70 pages of appendices detailing problem workrounds, fun tricks, tips, ideas, object creation strategies and detailed descriptions of all of the textures and F/X, many of which are useful in any 3D program.

The only real problem with *Understanding Imagine 2.0* is that it is almost a bootleggers' charter at only £15.95. Nevertheless, if you own *Imagine* you just have to buy this book. *Imagine 2.0* is arguably the best 3D system on any desktop computer. And now mere mortals can use it too.

AMIGA FORMAT GOLD 92%

Real Things – Dogs

Animated clip art ■ £30 ■ Living Data



The *Real Things* series is steadily progressing – *Dogs* has HAM colour depth and the new Chaining animation feature.

I AM NONE too partial to dogs. Hot dogs maybe, but dogs anywhere closer than *One Man and His Dog* I can do without. So dogs on a computer screen are just about in the right place for me. Nevertheless, it's a mark of RGB's success with the realism of *Real Things – Dogs*, that, even behind the screen, prolonged experimenting with the latest addition to the *Real Things* series has made me feel more than a little uncomfortable at times.

The *Dogs* package consists of two disks of animbrushes and animations suitable for using in *Deluxe Paint III* or *IV*, plus the usual thorough RGB tutorials and user guides. Nine breeds are covered; some in more detail than others. Once again – like *Safari* and *SeaLife* – all of the images are from frame-grabbed video, though some hand touching-up has been necessary. With so many copies of the HAM *Deluxe Paint IV* now available, HAM versions of some animals are provided, and these add considerably to the realism. Of all animals though, perhaps dogs are the least enhanced by the extra colour depth of HAM because they are quite limited in their range of shades.

As well as the introduction of HAM, RGB have introduced Chaining. Previously, each animbrush has had one complete movement of an animal – walking, hovering, swimming across the screen. If this method of animation is to progress, animators need to be able to link together several types of movement – changing direction, standing up and walking, running up to and then attacking prey etc. The 'Chaining' together of several movements in *Dogs* is the first example of what promises to be a very powerful tool.

Looking at the complete series of *Real Things*, a steady progression is obvious. *Horses* was well executed but obviously hand drawn. *Humans* and *Birds* were also 'just' produced the hard way, from scratch but with more skill and a real feeling for movement – especially *Birds*.

Safari and *Sealife* – originating from digitised originals – were far more realistic especially in the naturalistic movement. Now *Dogs*, with both HAM colour depth and the new concept of Chaining, has made another leap of development.

Nevertheless, by playing with lo-res images in *DPaint* again it is obvious how far the Amiga has fallen behind in the graphics area compared with the Mac and PCs. Huge chunky pixels and gross colour banding make it difficult to take this level of Amiga graphics seriously. This is not the fault of Real Things Studios who are trying their best on a limited system. Fortunately along comes the Amiga 1200 and the AGA. Let's hope Living Data will progress even further with the huge leap of quality to 8-bit colour and 800x600 resolution. No more dogs though please!

REAL THINGS – DOGS is available from RGB Studios 0825 732666

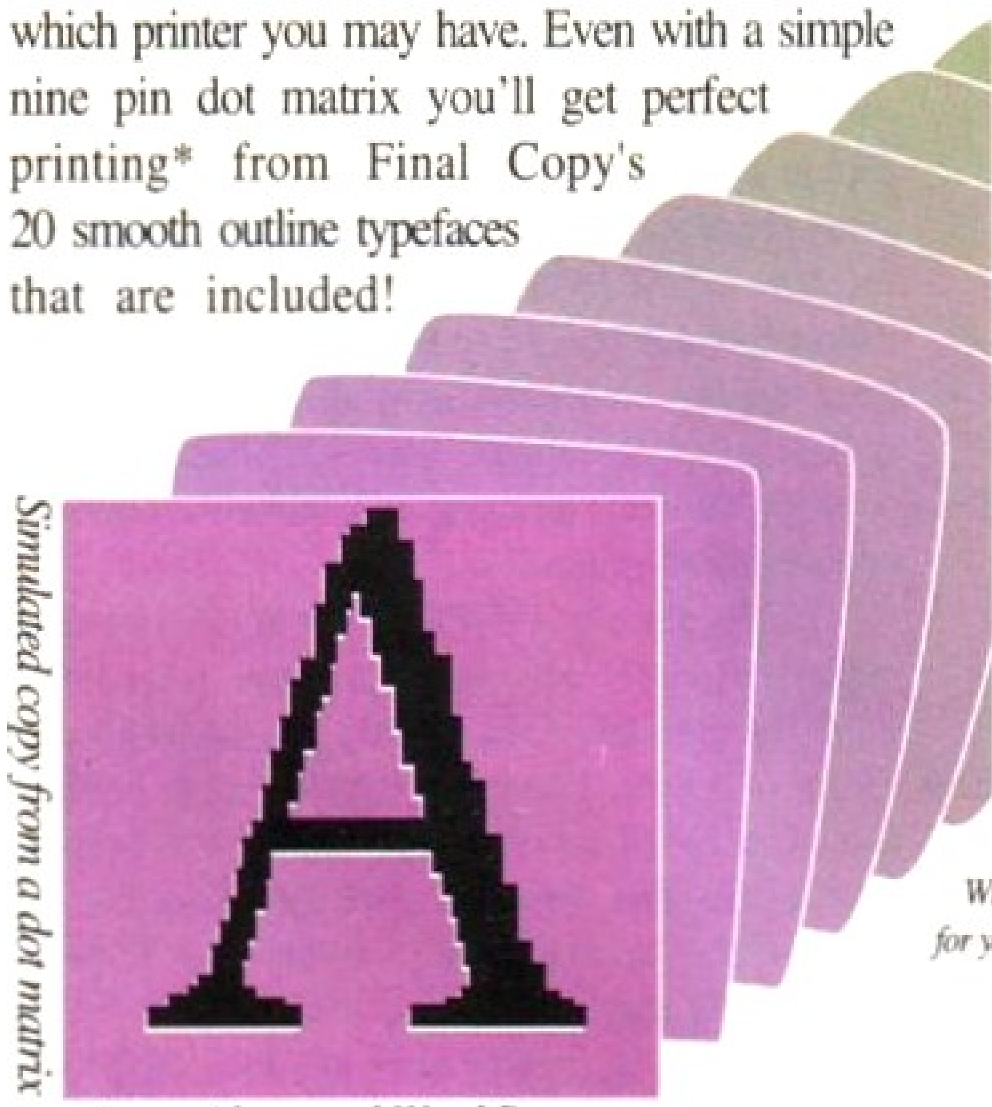
AMIGA FORMAT Verdict 75%

THE FINAL WORD

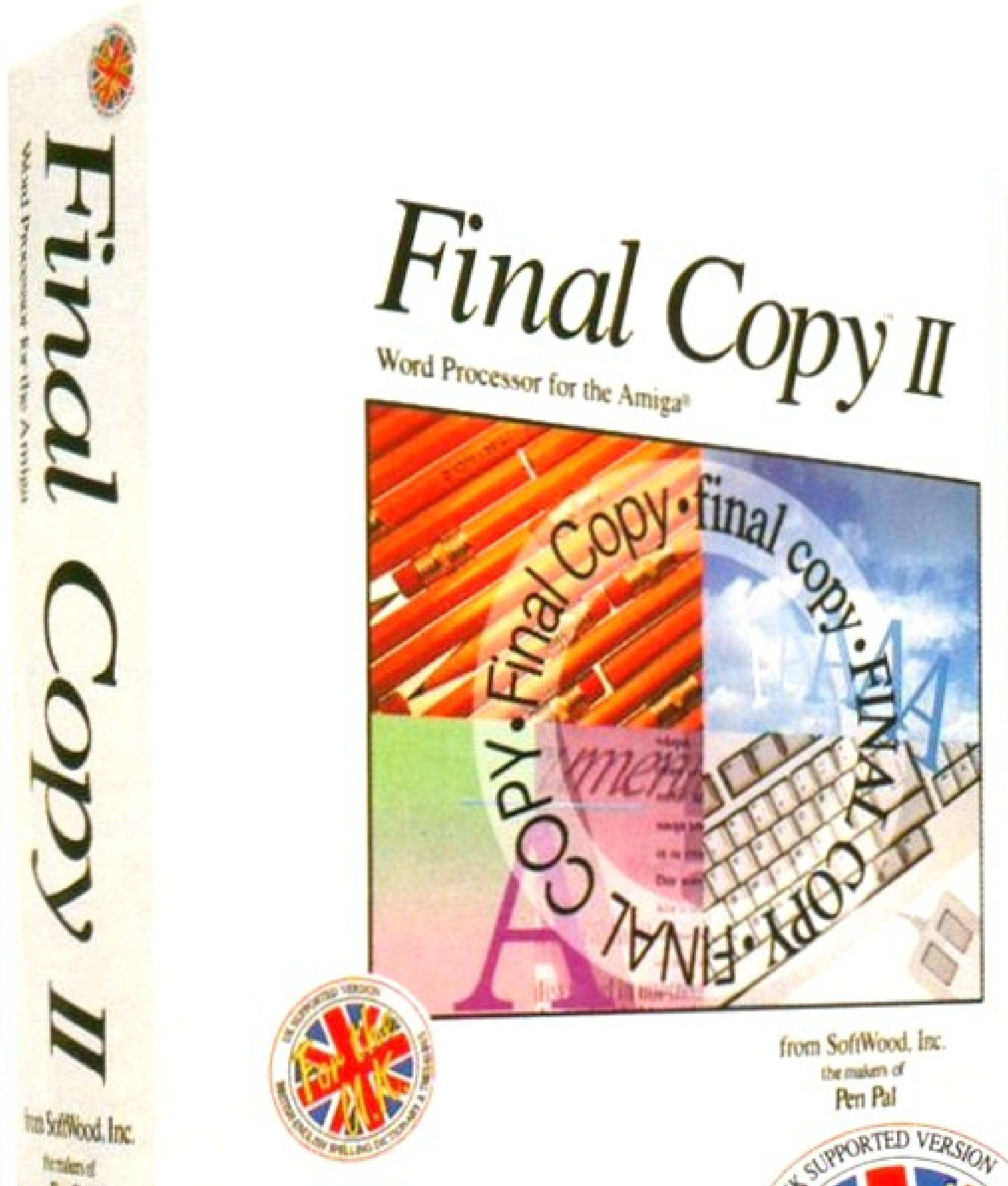
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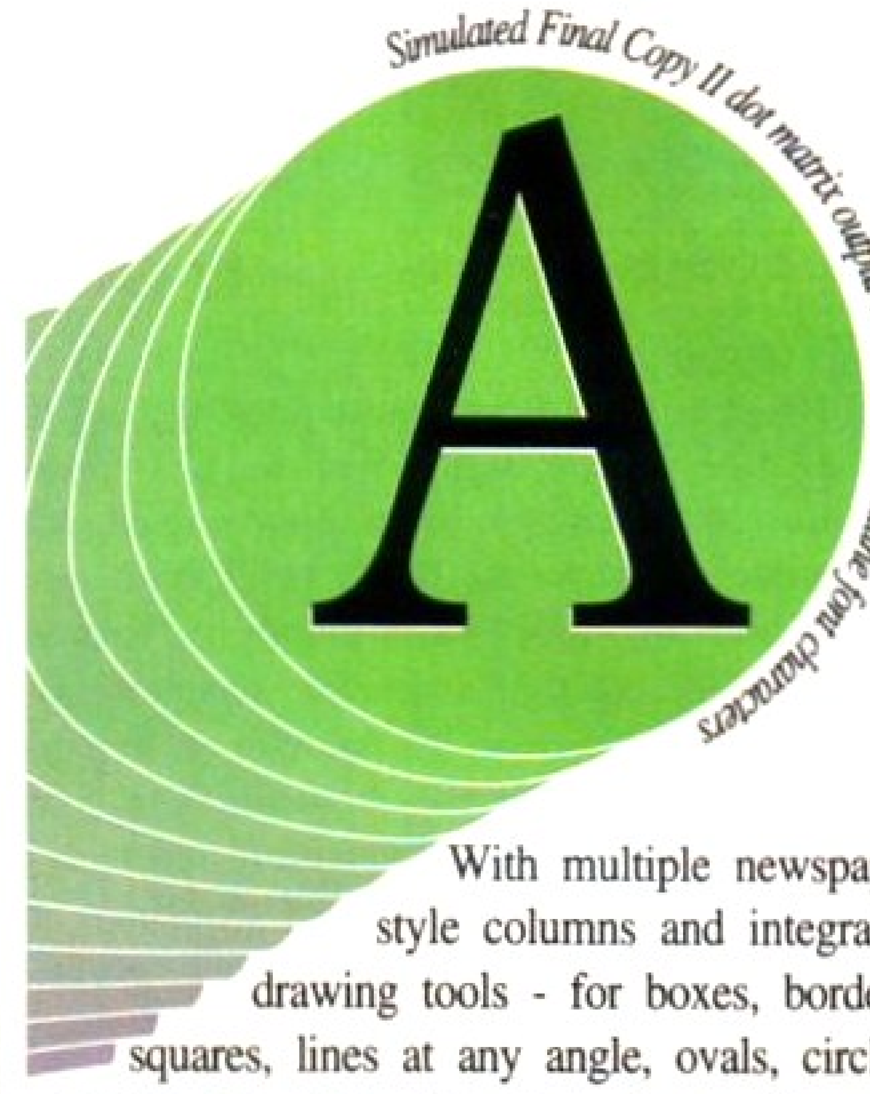
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AMF 2/93

Oki launch into the Amiga market with their new light-emitting-diode printer. Had laser printers better watchout?

Jason Holborn writes...

Oki OL400

£899 ■ LED Printer ■ Oki



The Oki is a well-designed and good-looking printer that brings you quality results at inexpensive prices.

OK, I KNOW what you're thinking – what's an LED printer, right? Well an LED printer isn't that different from conventional laser printers, such as the Ricoh LP1200 reviewed in Issue 41. Both type of printer use basically the same electrophotographic recording system to fuse charged ink particles on to paper. The only real difference between them is that an LED printer uses an incredibly fine array of light-emitting diodes (LEDs) to charge the sheet rather than a laser beam.

Heading Oki's offensive into the Amiga market is the OL400, a new printer that offers LED printing technology to the masses. As we've come to expect from all things Oki, the OL400 is a good-looking printer. Finishing in the same off-white shade of cream that adorns the Amiga 500 (although newer Amigas seem to use a far pastier shade of cream), the OL400 is a well-designed printer indeed.

The paper tray (which can hold up to 200 sheets of standard copier paper) sticks out of the front of the casing, giving easy access when the dreaded 'Out of Paper' error message appears on the OL400's LCD display. The control panel (which uses an LCD display) is both straight forward and surprisingly easy to use. It's so easy to use that you barely need to consult the manual.

The OL400 comes complete with three emulation modes, so getting your favourite program to talk to the printer shouldn't be a problem. By default, the OL400 runs in Hewlett Packard LaserJet 2 mode, but it can also be driven in IBM ProPrinter XL and Diablo 630 ECS emulation modes. Although the HP LaserJet printer driver bundled with Workbench 1.3 and 2.04 is sad to say the least, but rumour has it that Commodore have improved the driver in Workbench 3.0, the latest release of AmigaDOS that will eventually filter down to the rest of us in the shape of Workbench 2.1. There's talk too of a dedicated HP LaserJet driver from IrseeSoft (producers of the successful *TurboPrint Professional* and Citizen's *PrintManager*) too, so LaserJet 2-compatible printers are finally quite useable on the Amiga (about time too).



OL400 LED PAGE PRINTER

HP Series-II Emulation

Resident

1005 — 0123456789ABCDEFabcdef [US ASCII font]

1006 — 0123456789ABCDEFabcdef ÄÉÜ äñü ÅØ

Card Font

Soft Font

The Oki printer comes with Swiss and Dutch fonts, which are the same as Helvetica and Times.

The OL400 is equipped with a decent selection of typefaces, especially when the printer is run in its native HP LaserJet emulation mode. Typefaces on offer include Courier and Line Printer faces, plus 'Swiss' and 'Dutch', which are basically Oki's own versions of Helvetica and Times. These typefaces are available in a number of different point sizes, giving a maximum choice of 25 different fonts. If the fonts on offer don't meet with your approval, extra fonts and typefaces can be added using optional font cartridges.

OKI OL400
phone Oki for your local dealer
0800 525 585



subtle art of desktop publishing and reviews Oki's OL400 LED Printer. Could it be the answer to your DTP dreams?

Amiga Desktop Pub

£10,000 ■ DTP ■ Bert's Store

Superb printouts make the Oki the ideal choice if you use your Amiga for DTP, or if you need quality letterhead printouts.

The OL400 certainly shares more than a few similarities with more conventional laser printers. For starters, it's what the techies call a 'page printer' – that is, it's only capable of printing a whole page at a time, so you'll get a full sheet of paper thrown out at you even if you only want to print a single line of text.

Printers such as the OL400 are designed primarily for DTP work, so you're probably better off with a dot-matrix or an inkjet if printing text is your only requirement. Another similarity is the OL400's resolution – a bog-standard laser resolution of 300x300 dpi is the maximum printing resolution on offer.

In use, the OL400 proves itself to be a capable performer. Although printing speed is not exceptional (four pages per minute), the print quality is top notch, however a couple of my early printouts showed signs of print-purity problems due to unequal toner distribution (the same shade of grey would print slightly darker in some areas). After a few days use though, this problem managed to sort itself out and the print quality improved as a direct result. In particular, the output from *ProPage* was exceptional when printing at a maximum density setting of seven.

Prices for the OL400 can vary between dealers. Oki actually quote a retail price of £899 for the basic 512k OL400 and £1,099 for an OL400 with 1.5Mb of RAM (you'll need the extra RAM for *ProPage* work), but even they admit that you can pick up these two models for approximately £449 and £599 respectively just by shopping around.

Another big advantage of the OL400 printer is the low price of the toner cartridges – instead of the usual £70+ that you find with laser printers, a toner cartridge for the OL400 will set you back just £20! At these sort of prices then, the Oki OL400 represents perhaps the most affordable laser-quality printer available on the market.

Oki OL400

SPEED ●●●●
Despite Workbench's awful HP LaserJet driver, the OL400 turns out some acceptable speeds.

DOCUMENTATION ●●●
A little more detail would have been nice, but the manual is adequate enough.

PRINT QUALITY ●●●●
Apart from the print purity problems discussed, print quality was excellent.

FEATURES ●●●●●
The Ol400 is so blindingly simple to use that you don't really need a manual!

VALUE ●●●●●
Not only is the Ol400 cheap to buy, but it's also pretty cheap to run too.

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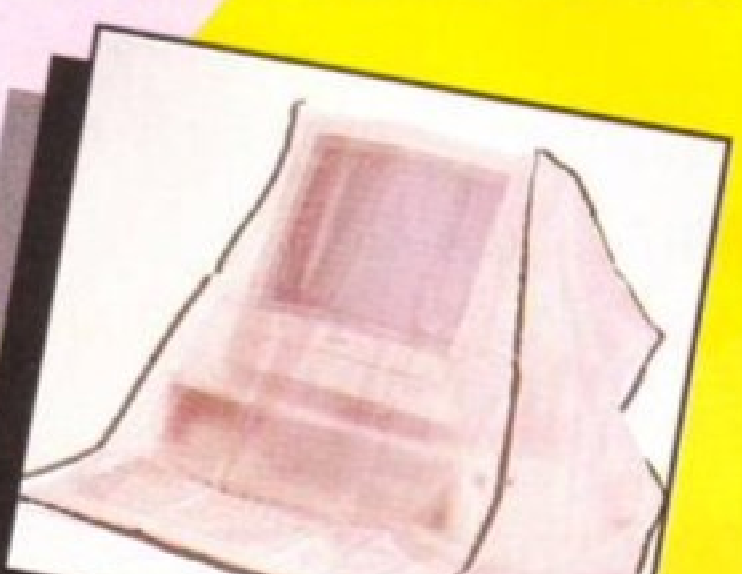


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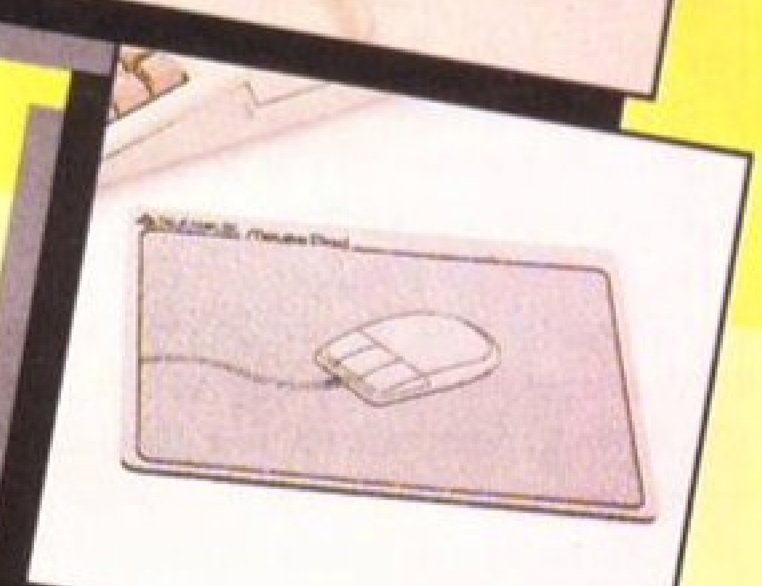
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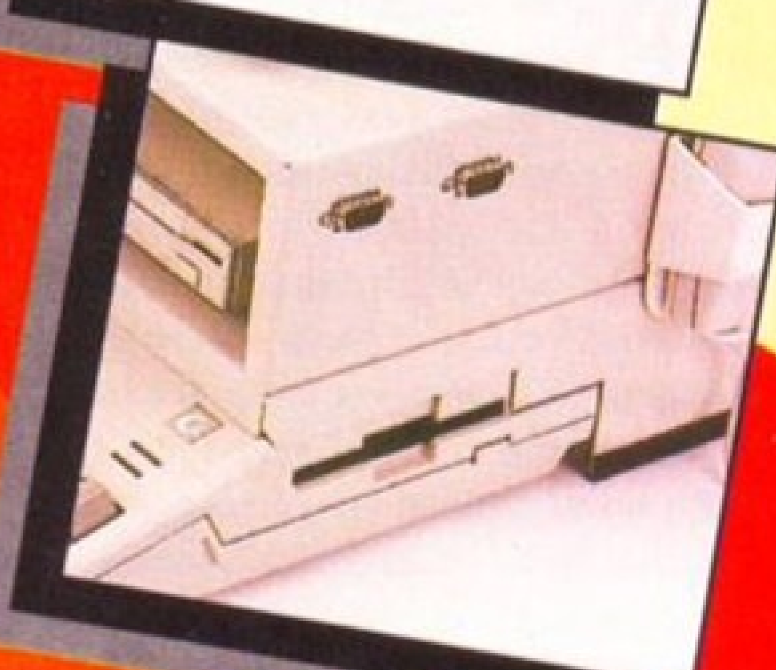
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The Disc Company have brought DTP within the reach of the masses with the cheapest Amiga DTP program yet. **Jason Holborn** says 'Wow!'

The Publisher

£49.95 ■ Desktop publishing ■ The Disc Company

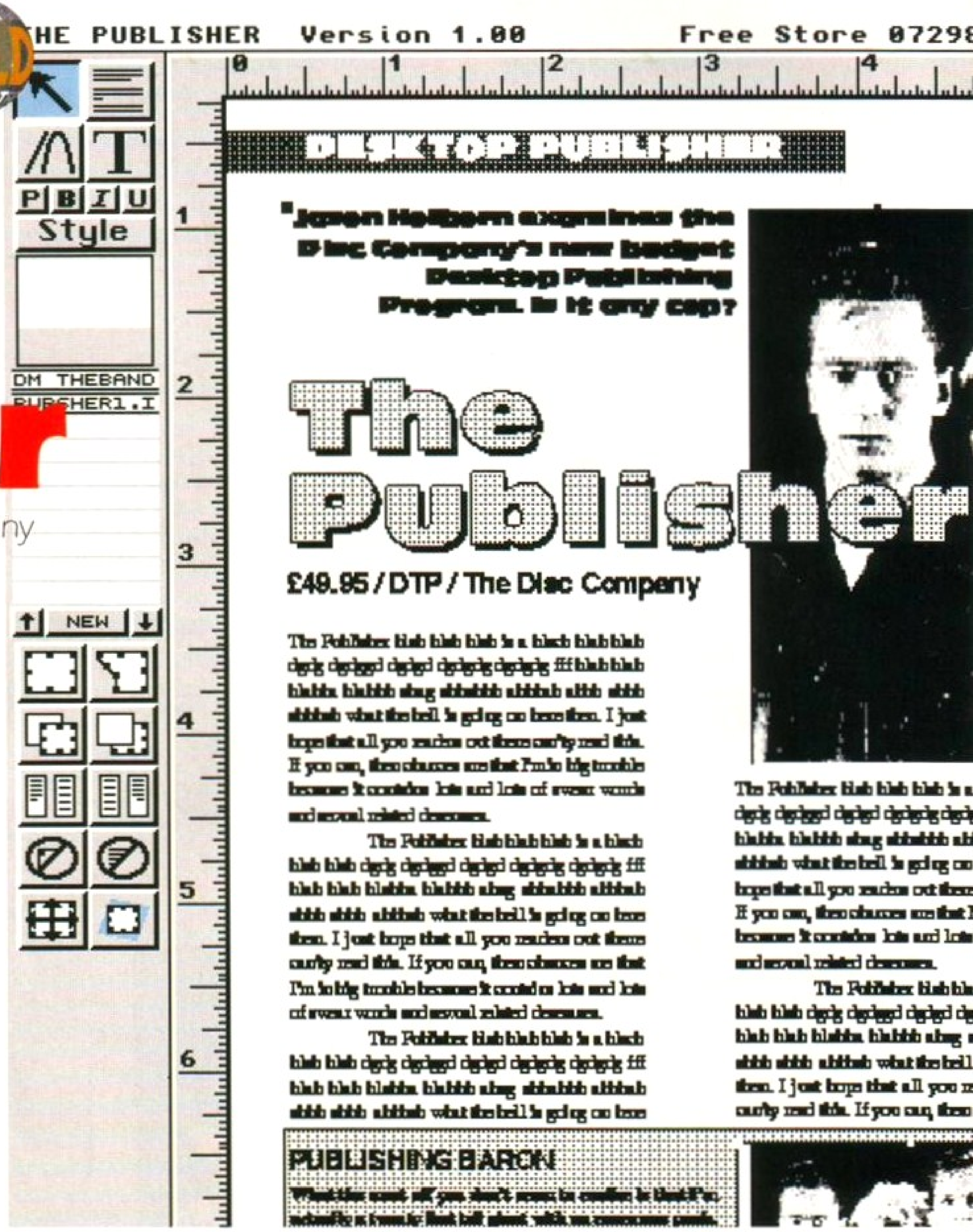
IN DESKTOP PUBLISHING the most expensive aspect can often be the software – capable packages like *Professional Page can* cost over £200 – so you've got to be serious about DTP to warrant the expense. In an attempt to bring DTP to the masses, though, The Disc Company have launched *The Publisher*, a mono-only program that can be used to produce anything from posters and fliers to complete magazines.

At under £50, this is the cheapest Amiga DTP program available – even *PageSetter 2* (its nearest rival) will set you back double the asking price of *The Publisher*. Surely at this price, it can't be any good... or can it? It comes on three disks containing two program modules and a plethora of fonts. Before you can start laying out the next issue of your football or Amiga-users' fanzine though, you have to install *The Publisher* on to a separate set of work disks or your hard disk (definitely a recommended extra, simply because of the amount of disk swapping that's needed).

Installation is fairly simple and involves setting up a couple of assignments that tell *The Publisher* and its program modules where everything can be found. It comes complete with programs that automate this process just in case you don't understand AmigaDOS.

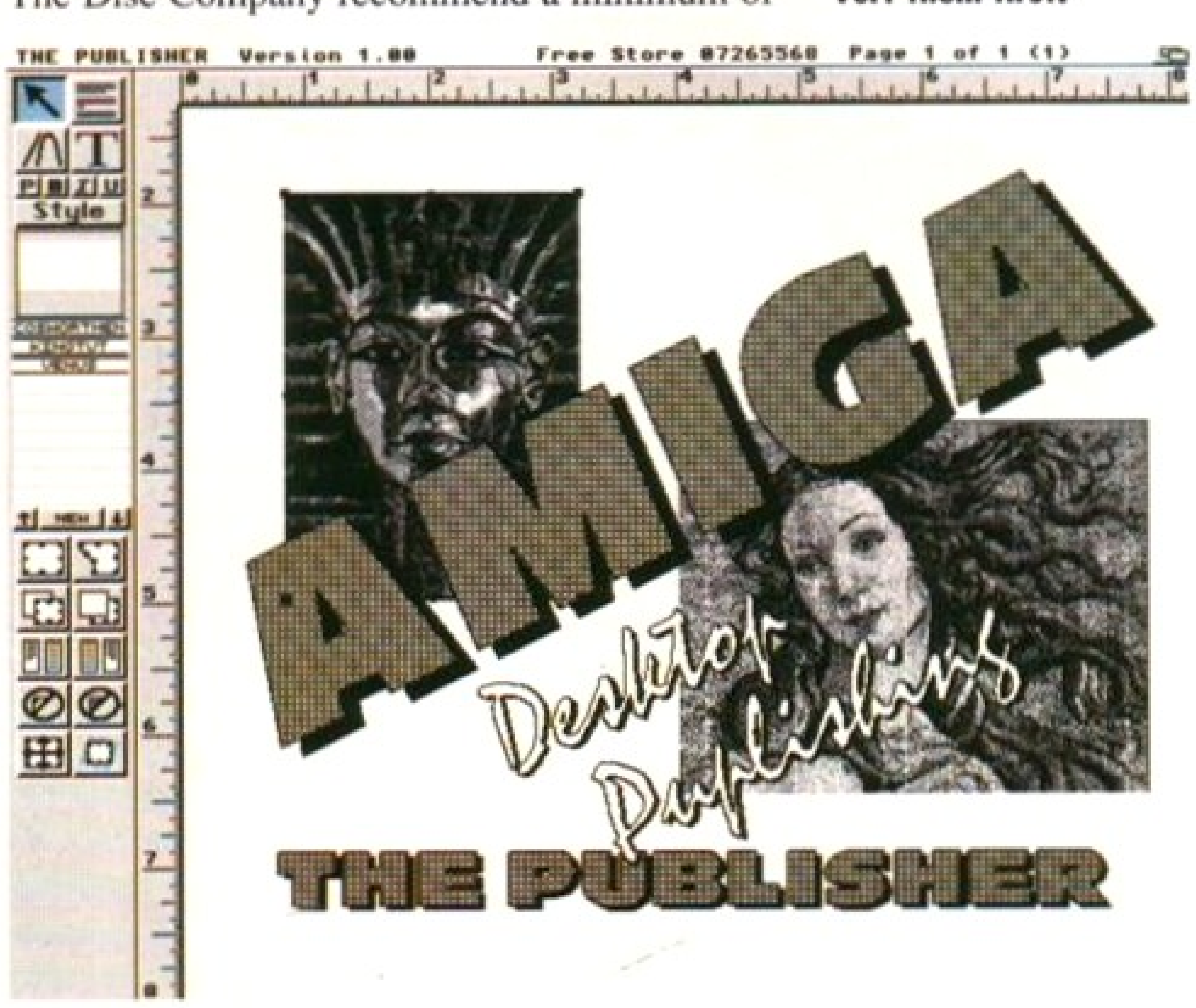
Like most DTP programs, it is memory hungry. Unless you've got at least 2Mb of RAM, don't even attempt to run the program. The Disc Company recommend a minimum of 1.5Mb, but this is unrealistic considering the memory overheads that creating even a simple document will demand. On a machine with 2Mb and a hard disk though, it is a very useable system.

THE PUBLISHER is available from The Disc Company in France on 010 331 4910 9995



Even a magazine such as *Amiga Format* could be laid out using *The Publisher* – and here's the proof!

Standard Adobe Type One fonts can be used with *The Publisher* without having to convert them first.



***The Publisher* comprises** two programs – the layout program and a separate PostScript interpreter. Why a PostScript interpreter? Well, this program is important because *The Publisher* is not capable of printing to any printer other than a PostScript device.

Obviously few home users have Postscript printers, so The Disc Company have included the interpreter to enable the output to be printed on a standard Preference-supported printer. If all this sounds familiar, you'd be right – *The Publisher* is actually a slightly cut-down version of Emerald Graphics' *Saxon Publisher*, a previously expensive (£200!) DTP program that proved only slightly more popular than the Inland Revenue.

Like *Saxon*, it does not have a straightforward process for laying out a page. Instead of simply opening up a box and dropping some text or graphics into the box (à la *ProPage*), with this program it requires more planning. Although pages are still built up from a series of boxes, each and every element (text and graphics, for example) is loaded into the program and then assigned to 'tags'. To transfer the element that you have loaded into a box, you then select the box and click on the tag that it is to be assigned with. OK, it's different from *ProPage*'s approach, but you'll probably find this is a more flexible approach.

Text can be flowed directly into a box by loading a text file created in any one of a number of word processors (*The Publisher* can read files from *Excellence!* and *Kindwords*, among others) or typed directly into the box using the program's built-in text-editing facility. Once the text is in the box, you then define a 'style tag' that dictates the type of font used, its point size, leading, tracking etc. Unlike *ProPage*, it can also automatically add both a shadow and an outline around any text that you choose to edit. And, because the program uses standard Adobe Type One outline fonts, you can also stretch and squeeze text within a box with no degradation in print quality.

The Publisher's direct support of Adobe Type One fonts is perhaps one aspect of the program that helps it to score well. Although Type Ones are still not seen as an accepted standard on the Amiga, getting your hands on



extra Type One fonts is considerably easier (and cheaper) than obtaining Compugraphic fonts (the Amiga standard for outline fonts) simply because of their widespread acceptance on the Mac and PC platforms. Now that both *ProPage* and *PageStream* can handle Type Ones as well, quite a few PD suppliers are starting to offer Type One fonts, so adding extra fonts to *The Publisher* is a cheap and easy affair. *The Publisher* is already well served with fonts though – the package comes with no fewer than 10 different typefaces including Helvetica, Times, Avant Garde, Bookman and Zapf Chancery.

Graphics in various formats can easily be ported into your documents. Standard IFF and IFF-24 bitmap graphics, plus EPS and DR4D structured drawings are all supported. Although colourful bitmaps can only be printed in monochrome, *The Publisher* is capable of representing these colours with up to 256 shades of grey when printing to a Postscript ImageSetter. IFF support is well catered for, but it would have been nice if *The Publisher* had provided direct support for *ProDraw* 'clip' files, the Amiga standard for structured drawings. As it is, you'll have to save your *ProDraw* drawings in EPS format to use them within *The Publisher*.

Box manipulation is one aspect that sets *The Publisher* apart from the competition. There are the usual tools to rotate, scale, flip and generally mess around with boxes and their contents, but it also enables you to create irregular-shaped boxes, something that even *ProPage* can't handle. You can also assign what it calls a 'texture' to any box too, including an outline, drop shadow and fill colour.

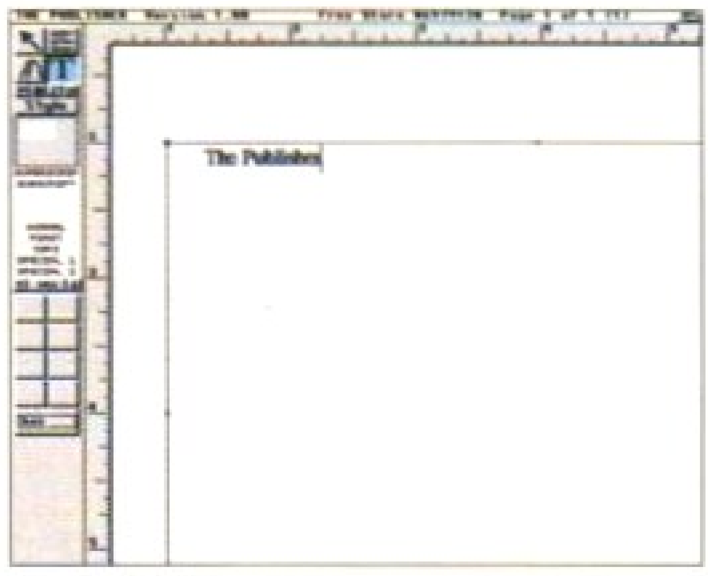
Printing is the most complex aspect of designing a page with *The Publisher*. Due to its *Saxon Publisher* origins, it is not capable of direct output to Preference-supported printers. Instead it creates a PostScript file that must then be loaded into its separate PostScript Interpreter (which is basically a rebadged version of *SaxonScript Professional*) if you want to print to a dot-matrix, inkjet or HP-compatible laser printer. Don't let this put you off – it's really a straightforward process.

The Publisher is one of those packages you initially loathe, but after a couple of hours' experimenting you end up absolutely loving it. Although it certainly isn't the most accessible entry-level desktop publishing program (its high system requirements and unconventional method of working see to that!) there's absolutely no doubting that it's by far the most powerful. To be honest, comparing it with its most immediate competition does the program no justice whatsoever.

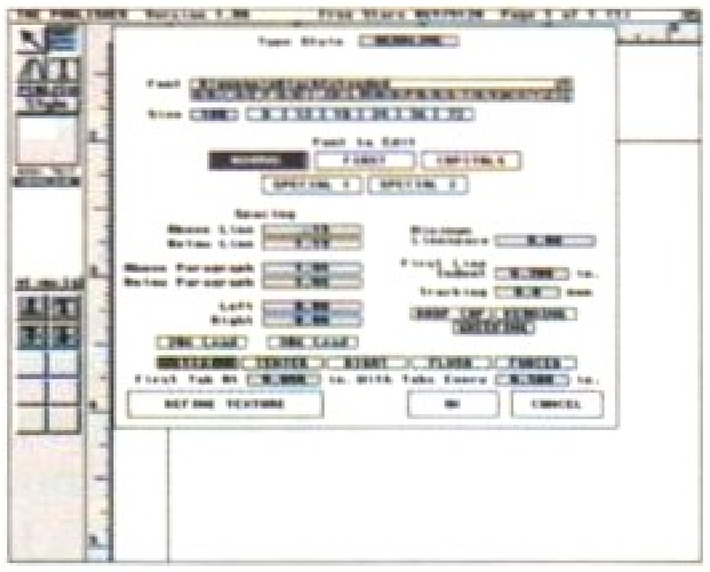
The Publisher is such a powerful program it deserves to be mentioned in the same breath as professional systems like *PageStream* and *ProPage*. With a good selection of Type One fonts and a hard disk-based Amiga, there's no reason why *The Publisher* couldn't be used to lay out ***Amiga Format***. Even on my rather aged B2000, it was able to produce pages with the kind of ease and quality normally only associated with high-end DTP programs such as *Ventura Publisher* on the PC and *Quark XPress* on the Macintosh.

If you're lucky enough to own an accelerated Amiga, *The Publisher* suddenly becomes a package that can trade punches with the best of 'em. For budding amateurs and professionals alike, it's a bargain that definitely shouldn't be missed.

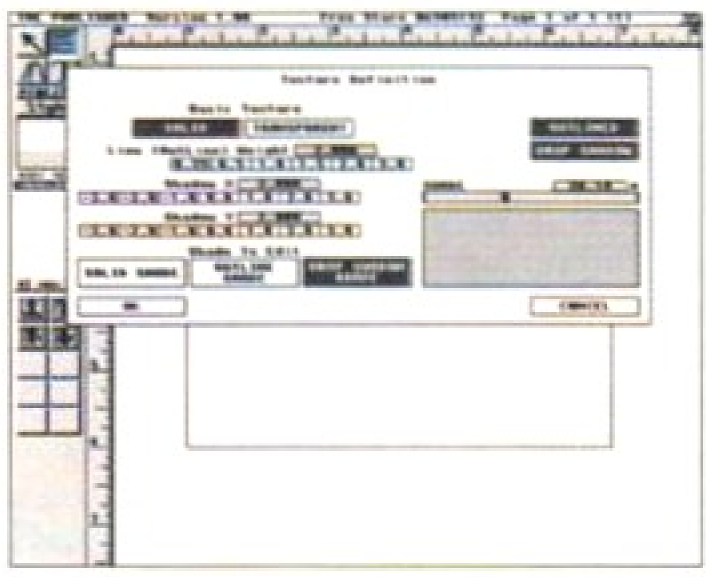
STEP-BY-STEP PUBLISHING



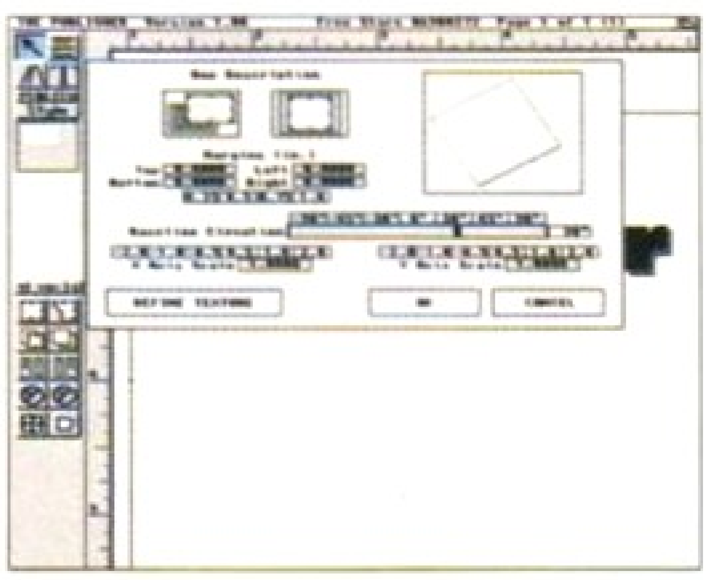
Once a box has been created and dragged to the size needed, text can be pulled in by typing it directly on to the page or by loading in a text file from a word processor. External text is flowed into the box simply by selecting the box and then clicking on the 'tag' that contains the text.



Now that the text is in the box, we can create a 'style tag' that defines the font to be used, its point size, leading, tracking and so on. Standard Adobe Type One fonts can be used without modification, so extra fonts can easily be bought, perhaps as PD, and added to the range available for use.



The next thing we can do with the program is assign a 'texture' to the text to define what degree of shade it's going to be and also whether or not you want a drop shadow for example, or an outline. Simple eh?



With the tag defined, a quick click on the 'paragraph style' gadget assigns it to our text. Next we rotate the text. Note that this doesn't rotate the box itself – just its contents. The box contents can be rotated through a full 360 degrees.



Here's our rotated text complete with its final typeface that we picked: drop shadow and outline. If you want, you can then reshape the box by pulling out each corner point so that the text flows correctly.



Graphics are easy to add. Just create a box, select 'Import IFF' and assign the tag to the new box. If the picture doesn't fit, you can use the 'Scale To Fit' gadget or manually scale the graphic using the Box requester.

The Publisher

SPEED ●●●●
Even on a fairly standard kind of Amiga, *The Publisher* is surprisingly rapid.

DOCUMENTATION ●●●●
Installation instructions are somewhat vague, but the program is explained well enough.

ACCESSIBILITY ●●●
Using the program is simple enough, but you'll need a fairly porky Amiga to use it properly.

FEATURES ●●●●●
Apart from no colour support, *The Publisher* can trade punches with the best of 'em.

VALUE ●●●●●
£50 for a package of this quality is exceptionally good value for money.

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JAMES STEVENSON · 1992



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To the Sun reader, astronomy is what Russell Grant does. To the layman, it's a world of semi-religious terms like Right Ascension. In truth, astronomy is as simple as turning on your Amiga and looking out of the window. **Neil Jackson** does a bit of star gazing...

Starlight excess



This is just one of *Voyager*'s many full-screen HAM views. As with *Distant Suns*, you can purchase more of these direct from the makers in the USA or create your own.

VOYAGER £69.95
by Carina Software

DISTANT SUNS
£69.95
by Virtual Reality Labs

Both are available from HB Marketing 0753 686000

ONE THING THAT astronomers hate about Britain, it's the weather. Not because they get wet, but because a sky of clouds makes viewing stars a bit tough. For first-time astronomers, there's another problem – knowing what you're looking for. It's easy to get disorientated when looking at a sprinkling of stars hundreds of light years away, especially if you don't know a binary from a black hole.

Famous names like Galileo, Herschel and Copernicus learned their astronomy the hard way, with pen and paper, endless calculations and a lot of eye-strain, but nowadays we don't have to go through that.

With an astronomy program you can do all the leg-work of finding stars without going out in the cold. Once you've located a star with your computer, you can read the coordinates from the screen and set up your telescope to match. Even if all you have is a pair of binoculars and a magnetic compass, an astronomy package can still make sky-searching easier.

There's an entire universe of bizarre celestial objects, man-made lumps in space, and Lord knows what else up there. The trouble is, it's never there when you want it and it's usually tiny when you eventually find it.

A good astronomy program lets you zoom in close to see the details, or experiment with different viewpoints. Really good programs (like those on review here) are supplied with digitised photographs taken by professional astronomers. These stunning full-colour views can make the whole topic seem more vibrant and exciting. And the more you play with your model universe, the more you'll learn from the real one – without getting wet or cold.

In essence, *Distant Suns* is similar to *Voyager*. It does many of the same jobs like tracking planets, updating the sky in real time, finding specific stars or deep-sky objects. The major difference is the way in which *Distant Suns* goes about its work. If you're running it from a single-floppy Amiga, you'll meet *Distant Suns'* clumsiness in the first few moments.

Although the program disk comes with its own Workbench which means you don't have to find yours, it doesn't auto-run, which is a bit daft (*Voyager* makes no pretence – it doesn't come with any Workbench, so you have to use your own!). Worse, *Distant Suns* takes ages to load, and at one point it asks you to swap the disks – using a black box, with black text, on a black background! Very helpful – not!

Assuming you make it past this oversight (which just looks like a black-screen crash), *Distant Suns* goes on to ask for no fewer than 10 disk swaps. Nightmare! I wouldn't want to have to do that in the dark. To get the most out of *Distant Suns* (and avoid terminal insanity) you really need at least an external disk. Both programs improve several hundred percent when installed on hard drive.

Another bug-ette occurs when you set up your location and current time. You type this data into a separate dialogue box which opens up on the main screen. This is fine if the system clock is stopped – if it isn't, the dialogue box resets to the system clock and location, usually just before you finish the last couple of entries. A small point, but an example of the way some things are done in *Distant Suns*.

Distant Suns does have features which aren't in *Voyager*, but there are only three worth noting. One is *Distant Suns'* facility to

DISTANT SUNS



At first glance, *Distant Suns* is a bit daunting, because all the simple functions are tucked away in hidden menus. It's also slightly slower to update.



Distant Suns' most impressive feature is its What's Up? mode. This tells you all the important things you're going to see in the real sky tonight.

VOYAGER



No matter where you are on Earth, you can pinpoint your viewing location with a couple of clicks. And you can even learn a bit about the Earth too!



Lunatics beware! With *Voyager*'s moon map you can spot individual craters and find out where the astronauts landed. A full moon indeed!

create animations which you can save as ANIM files, another is its AREXX commands. Combine the two and you can make some impressive standalone animations automatically, but it requires some time to master.

A more useful feature is the 'What's Up?' mode which displays all the major movements in your bit of sky according to the current date, time and location. It's quick and useful and it's great if you're intent on spotting something 'special' and you need to know the time it happens. It also gives you a few days' advance warning of meteor showers.

Some of the other claimed features don't seem to be doing anything at all. The twinkle option is supposed to simulate the interference caused by the Earth's atmosphere, but this has no noticeable effect, despite much twiddling with the monitor.

Another mode, the Flashcard, is supposed to give you quick star-spotting tests. In theory, it chooses a random constellation viewed from Earth and you guess what it is. In practice, it just doesn't work properly and it just keeps displaying the same bit of sky, and then crashes. Further investigations seem to produce no solutions, but the crash hasn't happened again, just to be awkward.

On the whole, *Distant Suns* is a bit disappointing compared to *Voyager*. It does have redeeming features, especially the animation capability, but it doesn't really have the air of quality that *Voyager* possesses. It may be more useful than *Voyager* if you're a die-hard serious astronomer, partly because its notation will be more familiar to pros than beginners, and partly because it has a red-only display mode which doesn't ruin your night-vision.



This is one of the two full-screen views that come with *Distant Suns*. If you want any more, you have to buy them separately.



On December 9 1992 there was a total eclipse of the moon. Viewed from the surface of the moon of course it would have appeared as a solar eclipse.

SKY VERSUS SKY – THE PROGRAMS COMPARED

Both programs feature a bewildering array of options, and both look similar when it comes to the stars on the screen. But the two programs have several differences which could change your buying decision. Here's how they stack up...

	Voyager V1.1	Distant Suns V4.1
SYSTEM SET-UP		
Minimum RAM	1 Mb (chip)	1Mb (chip)
Number of disks supplied	3	2
Runs from floppies	Yes (Workbench reqd)	yes (Workbench inc)
Hard-drive installable	yes	yes
Multi-tasks OK	yes	yes
User-definable startup	yes	yes
Load/save settings	yes	yes
Demo settings included	yes (38)	yes (3)
TIME CONTROLS		
Auto-advance time	yes	yes
Forwards and backwards time	yes	yes
Variable time step	yes	yes
LOCATION CONTROLS		
User-definable location	yes	yes
Pre-defined city locations	yes	no
Pick from globe	yes	no
Pick planet to view from	yes	yes (not moon)
Outer space viewpoints possible	yes	yes
VIEW CONTROLS		
Variable field of view (zoom)	yes	yes
Star atlas/planetarium view	yes	yes
Local horizon view	yes	yes
Full sky/Mercator view	yes	yes
Variable brightness/magnitude range	yes	yes
Town/country/city sky brightness levels	no	yes
Twilight sky modes	yes (3 shades)	yes (16 shades)
Star trails	yes	yes
Twinkle mode	no	yes
Dim control panel	no	yes
Lock view to object	yes	yes
Show precession (planet-wobble)	yes	yes
VIEW OPTIONS		
Planets	11	11
Quick-search major stars	17	1
Quick-search constellations	88	89
Quick-search asterisms (familiar star-clusters)	24	10
Comets	16	11
Asteroids	16	3
Spacecraft	5	none
Deep-sky objects (galaxies, nebulae, etc)	yes	yes
Constellation outlines	yes	yes
Mythical constellation creatures	yes	no
Sky grid	yes	yes
User-definable object orbits	yes	yes
Earth's shadow	yes	yes
Custom horizon line	yes	yes
Milky Way outline	yes	no
EXTRA FEATURES		
Identify random star mode	no	yes
'What's up tonight?' mode	no	yes
Conjunction search	yes	no
Planet gallery	yes	no
Moon map	yes	no
Day/night map	yes	no
Full-screen planet/star pictures	22	2
Save screen as IFF	yes	yes
Save animations as ANIM file	no	yes

If you intend to create animated sequences which can be played separately, *Distant Suns* is the only choice. However, *Voyager* has several interesting sub-screens which provide more detail on the common stellar objects than *Distant Suns*. This, combined with the easier control interface and more accessible educational bits make *Voyager* the best choice for a casual, amateur or beginner astronomer – and that's most of us!

Distant Suns is a bit more techie, and assumes a degree of knowledge and patience which only more advanced astronomers may possess. *Distant Suns* is better-suited to 'fieldwork' with a telescope, because it can give a quick run-down on objects which are in the sky at any particular time and date. *Voyager* can also predict interesting events, but the only way to find what's available for viewing is to run a few time-lapse frames and study the screens – a bit more time-consuming.

Overall, *Voyager* is the most recommended program of the two because it provides the most options and, more importantly, they're presented in a much more understandable way than *Distant Suns*.

Voyager does everything with a certain flair and lack of complexity that *Distant Suns* just doesn't seem to have.

Distant Suns

SPEED ●●●
Slightly slower than *Voyager*, *Distant Suns'* update rate isn't excessively slow, just erratic.

DOCUMENTATION ●●
Too much waffle, most of which doesn't really demonstrate what you can do with the program.

ACCESSIBILITY ●●
Unwelcoming first screen sets the tone. The program is tough to get your head round.

FEATURES ●●●
Not as many features as *Voyager*, but *Distant Suns* can build and save animation files.

VALUE ●●●
Useful and interesting, but only worth investing in if you specifically want to make ANIM files.

AMIGA FORMAT Verdict **76%**

Voyager

SPEED ●●●●
Good enough on an A500, *Voyager* literally flies along on an Amiga 1200.

DOCUMENTATION ●●●●●
Walk-throughs and reference sections make this an ideal manual for beginners and pros.

ACCESSIBILITY ●●●●
Obviously there are techie bits, but *Voyager* is fairly intuitive, even to first-time astronomers.

FEATURES ●●●●●
Bundles more options than anything else at this price. Enough to keep you involved for hours.

VALUE ●●●●
A bit pricey, but *Voyager* is worth it. Consider it an investment into your/your kids' education.

AMIGA FORMAT GOLD **92%**

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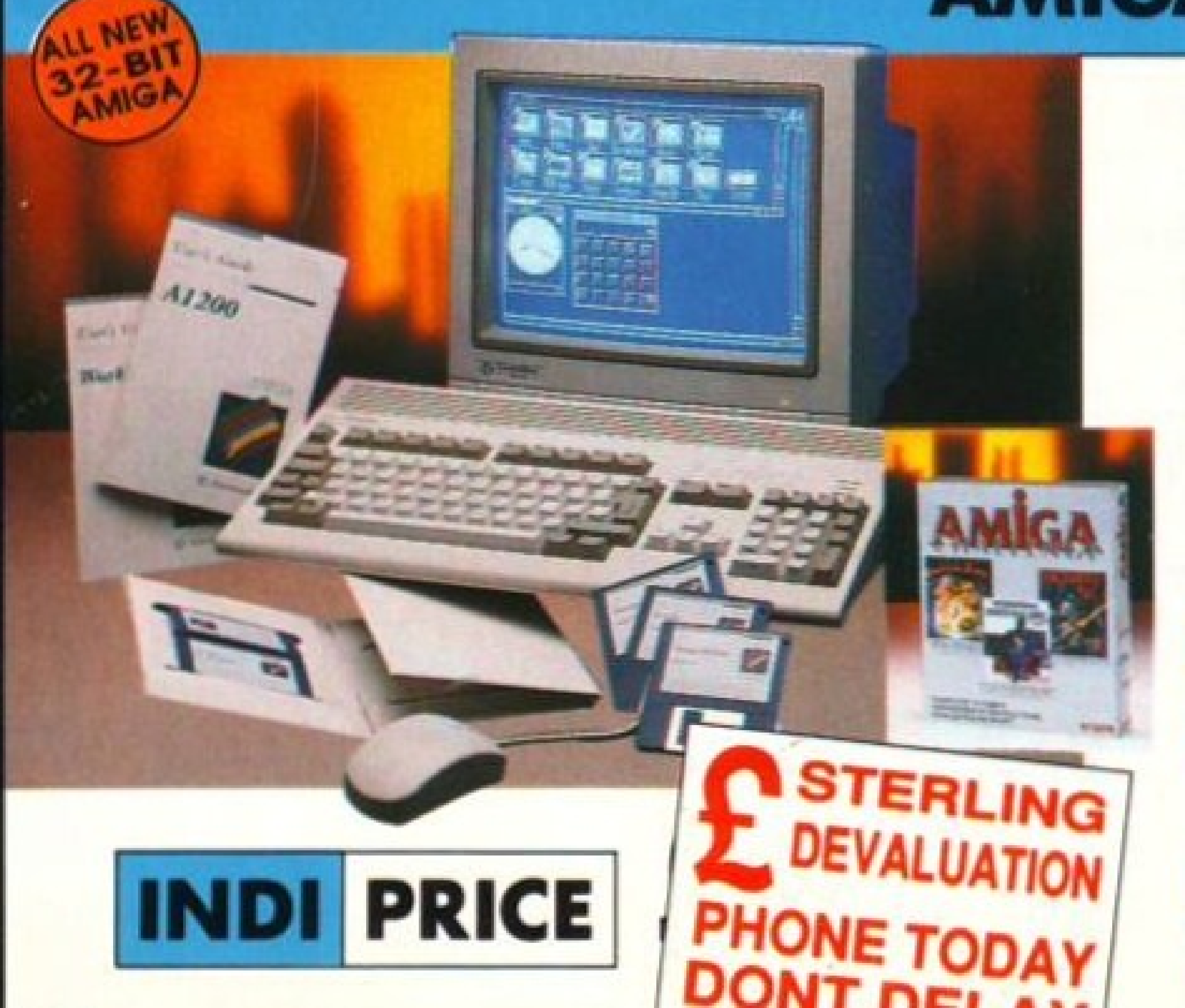
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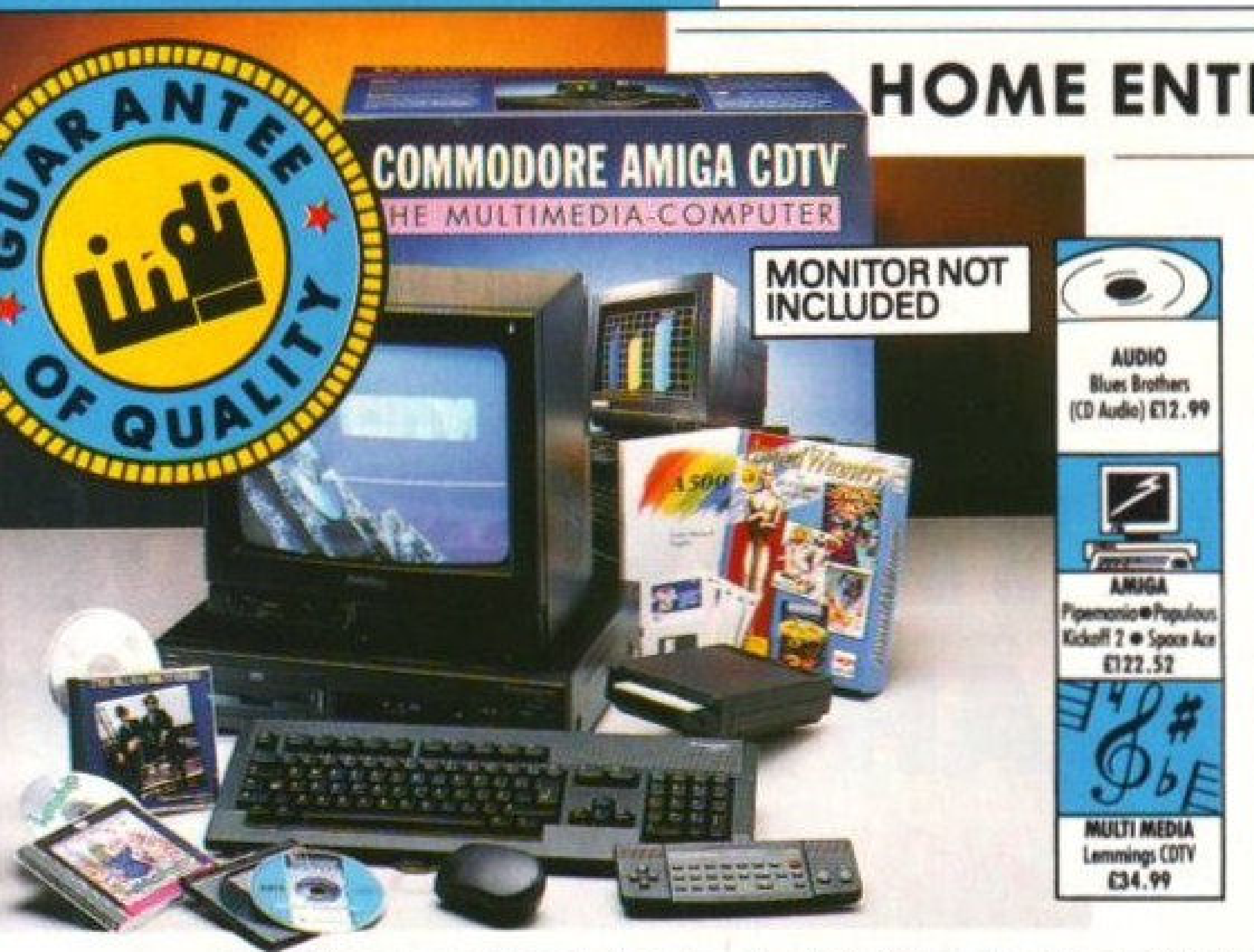
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THE INDI GUIDE TO CDTV

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IT'S A MULTIMEDIA SYSTEM - Just imagine, stereo sound, images and text all on screen. It asks a question, you respond, it responds - truly interactive! Each CD disc holds hundreds of megabytes of data with instant optical access. The whole of Hutchinson's Encyclopedia fits onto 1 disc. This interactive system is a unique aid for Education, Business or Leisure. The future is here!

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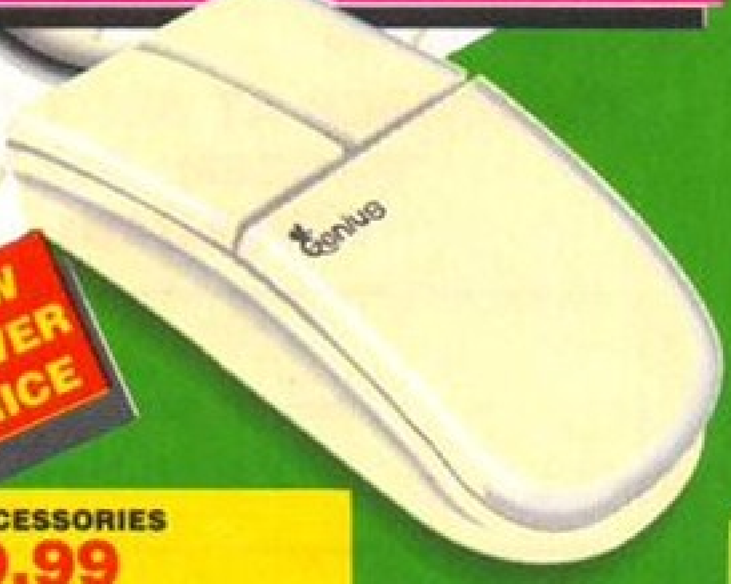


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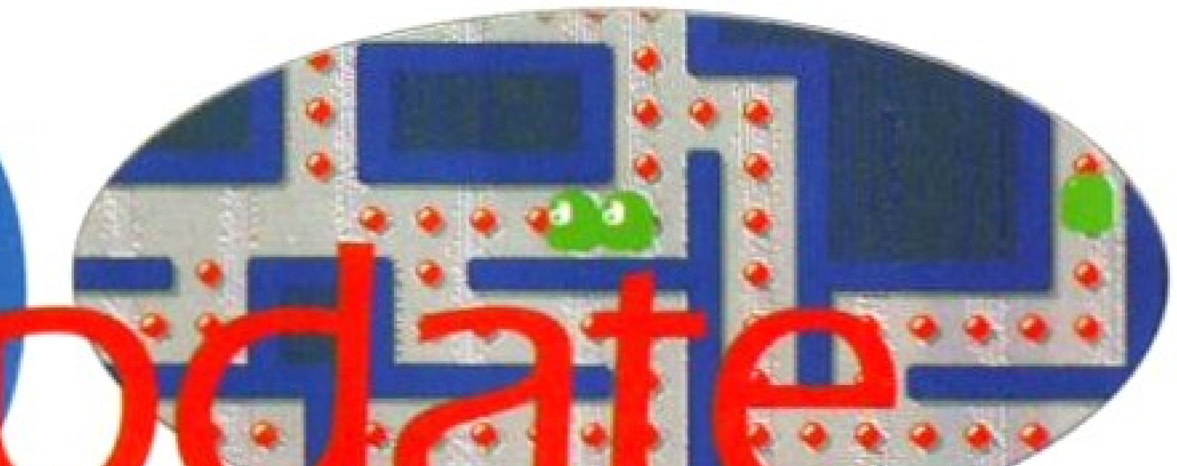
GAMES DISKS

+2228 .... ROTON
+2225 .... CRICKET
+2221 .... SKY FLIER
+2218 .... OBLIDOX
+2209AB .... OLEMPIAD
+2207 .... ESCAPE
+2200 .... TURBO THRUST
+2197 .... ACT OF WAR
+2192 .... CHAINSAW MASS
+2191 .... PINBALL PREVIEW
+2185 .... SILVER BLADE
+2184 .... MATRIX
+2176 .... CROSSMAZE
+2174 .... KLAKTRIS
+2173 .... ASSASSIN PREVIEW
+2171 .... GAMES COMP 30
+2163 .... GAMES GALORE 12
+2158BA .... FRANTIC
+2156 .... TOP SECRET
+2147 .... VERB QUIZ
+2141 .... OTHELLO
+2139 .... ROULETTE
+2136 .... POTATOE HEAD
+2130 .... AIRPORT
+2111 .... RESCUE
+2110 .... TANK ATTACK
+2109 .... DONKEY KONG
+2107 .... CASTLE NOMIS
+2105 .... GAMES GALORE 11
+2100 .... TRAILBLAZER
+2097 .... DR MARIO
+2090 .... SOCCER CARDS
+2085 .... CARD GAMES
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+2051 .... BALDY

UPDATE 28

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PD Update

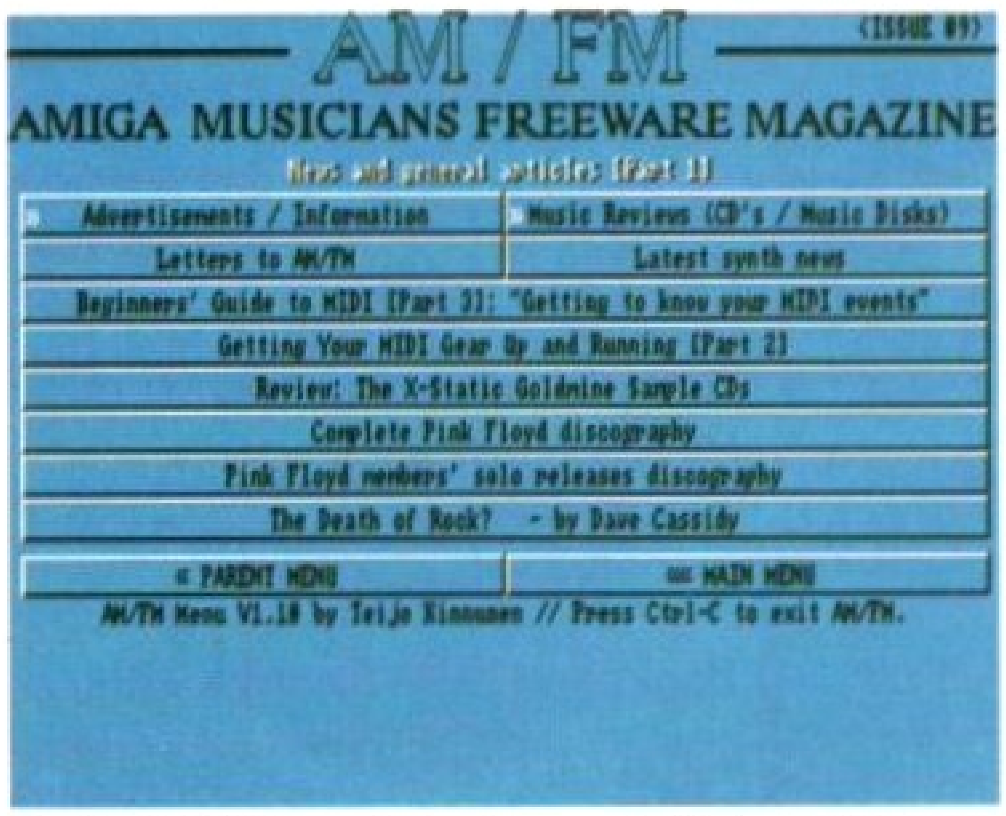


Emerging from that huge pile of Public Domain disks on the other side of the office is the man who they call **Pat McDonald**. And clutched in his hands he has the latest pick of the free software…

AM/FM 9

MAG

CYNOSTIC D0020



Maybe *AM/FM* does look a bit too simple, but Teijo Kinnunen's front-end is very easy to use and bug free.

Bjorn Lynne, apart from being one of the most noteworthy musicians in the Amiga scene, is continuing to spread the word through the *Amiga Musicians Freeware Magazine*. OK, it's a magazine on one disk, which means there's not that much to keep you spellbound. But what is there is very good, and there's also a companion samples disk with each issue – the sample disk is stuffed with drum sounds from a Korg M1, which should ensure many a good beat.

The best part about *AM/FM* is that it's Interesting for beginners as well as old hands. It's a shame they scrapped the *MED* tutorial, but there's a lot of other useful stuff there, like a continuing series on MIDI and a few pieces on musical trends (which is what your commercial musicians are really interested in). David Cassidy's 'Rock Is Dead' article is most stimulating, exploring the reasons why 'guitar music' is becoming less popular.

As for the music, it's mostly not Bjorn (just as well, 'cause I find his stuff a bit dry). Kim Jensen, Andre Meyer, Kon Wilms, and Aarno Ylisela have all contributed an invigorating mix of musical styles, which together with the MIDI track for Vangelis' *Chariots of Fire* makes for a useful bunch of raw data. Some of the music is playable straight through your Amiga, other stuff needs a MIDI sequencer plus a synth or two to be heard. There's even a 'Recognise this piece of music?' competition. Very good, if a bit small.

BLUE ROSE FONTS

UTILITY

EDDIE BARRY

Very useful disk this. First off it has a slideshow of the fonts that are included on the disk – good examples of how to put the fonts to creative use. To be honest, the fonts are more useful for slideshows and demos than for desktop publishing, but this is PD Update, not DTP corner.

The fonts are mostly in colour, for use in *Deluxe Paint III* or later, and are very eye-catching. You get 42 different styles, mostly very large, so if you're looking for stylish fonts to label your creative works, look no further and get this disk. Oh yes, as well as being available from a few PD libraries, it's also available straight from Eddie Barry for the princely sum of £1.50. A shame they're not scalable, but at this price, what do you want, blood?

TACK

UTILITY

CRAZY JOE'S 2314



Eyes everywhere – a short *TACK* demo that only runs on 1.5Mb machines. Efficiency is not *TACK*'s strong point.

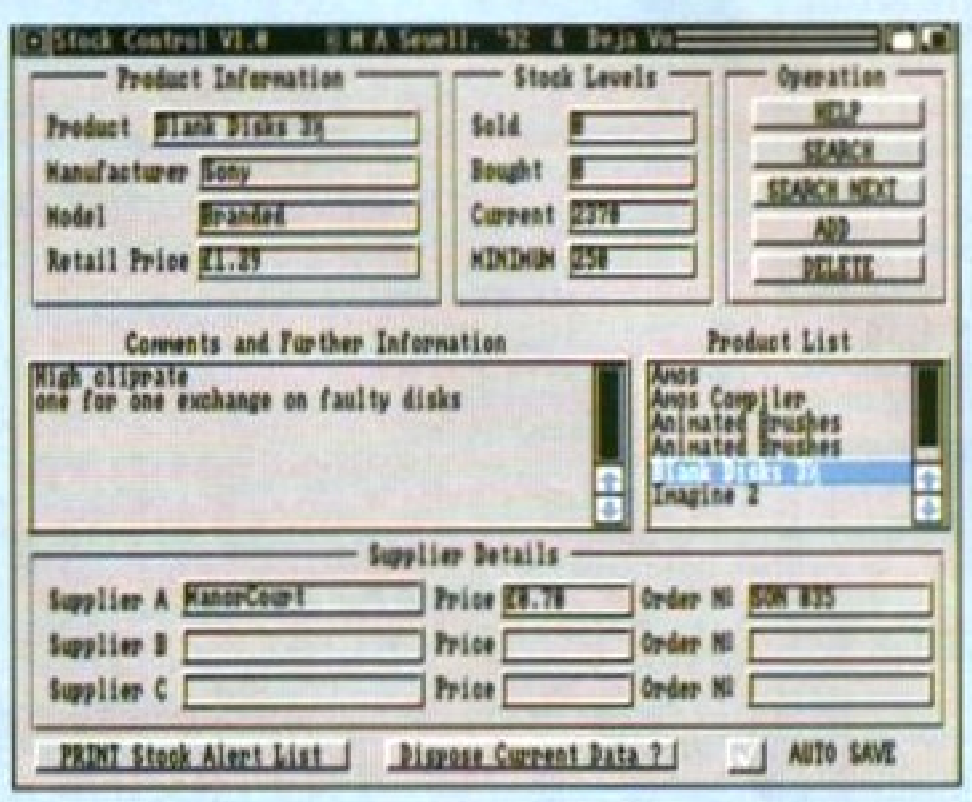
The Animation Construction Set – should be *TACS*, really. Anyway, whatever you call it, this is just a set of utilities to help you create your own self-booting animation disks with a bit of music on. Before you rush off and try to create a movie, I have to say that the resulting disks are not as good as full-blown demos with their own custom programming. But if you don't know a coder and want to release small animations, this disk could help.

It has to be said that the disk leaves a little to be desired – the way that you create your own disks is to copy the supplied one, delete the animation on it, and put your own there. A similar procedure is used to change the sound module to accompany your animation. Rough and ready really, but it's simple and it works, plus you can do a bit more tweaking if you know your way around the Shell. Not exactly perfect but it's a start. Well done to Gerry Broad and Alistair Hare (Broad and Hare Animations) for a beginner-friendly disk.

STOCK CONTROL V1.0

UTILITY

DEJA VU L/111



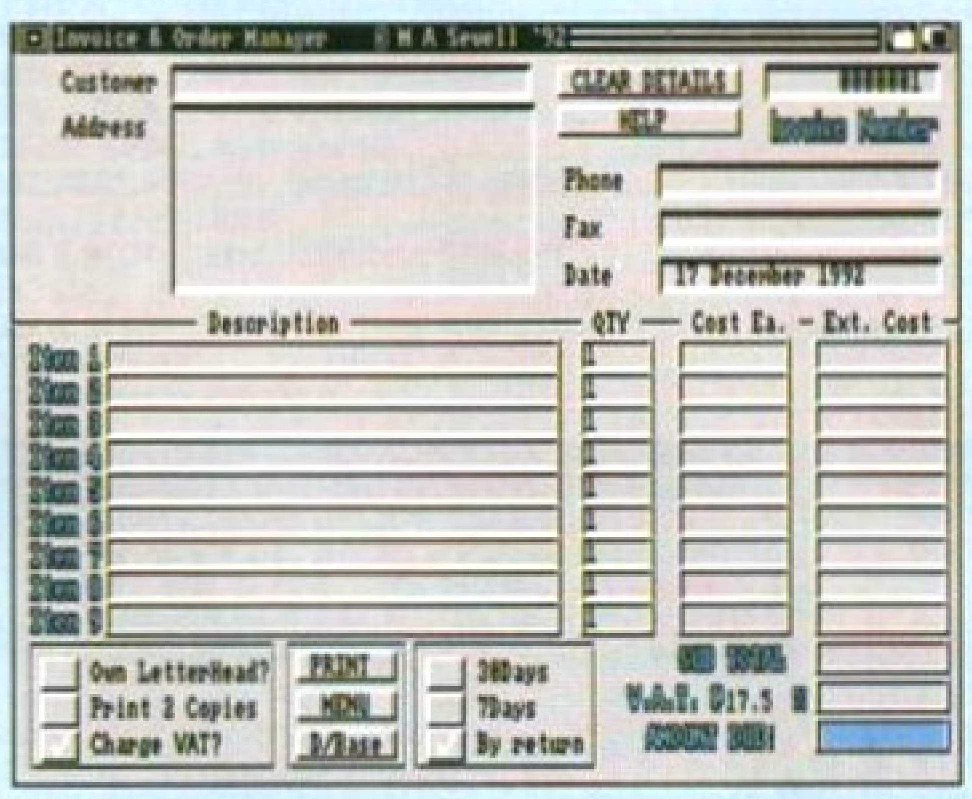
Wouldn't it be nice to be automatically warned when you had to order stock? This does that and more.

This is a release from MA Sewell and it's programmed with *CanDo V1.6*. It's not the greatest stock-control program ever written, but it's easy to use, gentle on the novice, works with a printer and installs to a hard drive. If you've got a small stockpile that you want to keep control of, get this disk. Works best with Workbench 2, but 1.3 can be used too if you boot it before you run *Stock Control*.

THE MANAGER

UTILITY

DEJA VU L/112



Nine items on an invoice sheet, automatic VAT calculation and fastish printing – what more do you want?

Yet another MA Sewell release, for keeping track of invoices and orders. Very similar in style to the *Stock Control* program, just as easy to use and highly recommended to the lower end of the business community who are willing to give cheap software a try. With both applications you get the programmer's address and telephone number (in the UK) for fast, effective support.

METAL LIFE

GAME

DEJA VU Y109

Robert Glavas has been working hard on this *Operation Wolf*-style game. The plot is pretty basic – the evil Excel company has been making military robots for illegal export. You've got a nice, big, fun and fast car to stop them. It's very difficult, pure mayhem, not excellent graphics (it was written in *AMOS*) but still a worthwhile release. Not an easy game to complete and very good presentation (heavy metal music is not easy to do on the Amiga, plus the high-score table is wicked).

Continued on Page 168

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Making Music On The Amiga	£38.45
Mastering Amiga Printers	£19.95
Amiga Desk Top Video 2nd Edition	£20.95

GAMES

No.	Title	Comment
+ 904	DRIP	(FAMOUS)
+ 908	STARTRECK	(2 DISKS)
+ 909	TANX	(ADDICTIVE)
+ 910	CHESS	
+ 915	MISSILE COMMAND	
+ 916	AMEOBA INVADERS	
+ 917	ROLLERPEDE, INVADERS	
+ 918	AMIGA DRAGON TILES V2.5	Great tiles game
+ 919	ZEUS	
+ 920	HOLLYWOOD TRIVIA	
+ 922	THE SIMPSONS	
925	WIZZY'S QUEST	
+ 926	THINK TWICE	Master Mind
+ 927	HYPER-BALL	Arkanoid clone
+ 929	SEALANCE	Submarine Sim, Good
+ 930	SHAPES	Good for Kidz
+ 931	WACKO Jr.	In Wonderland
+ 934	SCRABBLE	
+ 935	WORMHOLE	
+ 936	ANAGRAMS	
+ 939	SKY FLYER	
+ 940	GALACTIC FOOD FIGHT	
+ 941	ATIC ATAC	
+ 942	D-TRIS (TETRIS)	
+ 943	ARCADE CLASSICS	inc space invaders
+ 944	NU THE SHOOT EM UP	Great stuff
+ 945	CARD GAME	S lots
+ 947	E-TYPE	The best Asteroids clone, NEW
+ 948	TETREN	Best Tetris Clone out
+ 950	15 GAMES	by Assasins
+ 951	TOTAL WAR Like RISK	(Strategy)
+ 952	YUM YUM	
+ 953	BATTLEMENTS	Remember HUNCHBACK?
+ 955	INTERNATIONAL CRICKET	
+ 956	PIPELINE…Like Pipemania	Good
+ 957	MATHS ADVENTURE	Excellent Maths Quiz
+ 1050	SURVIVOR	Dungeon Master Type Game
+ 1051	ESCAPE	Escape from the Dodgy Floor
+ 1052	BEAST	Corner the Beast
+ 1055	QUADRIX	Brilliant Puzzle Type, 10/10
+ 1056	CROSSWORD CREATER	
+ 1057	QUESTIONTORT	Create Multi/Choice Quiz's
+ 1092	ESCAPE V.3 +	Snowgame
+ 1100	GX200	New game
+ 1106	MENTAL IMMAGE GAMES 1	c64 type great
+ 1107	MENTAL IMMAGE GAMES 2	Sim above
+ 1150	HELLZONE	Close to R-Type
+ 1151	SERENE III	Another great shoot'em up
+ 1152	NUMPTY & THE ALIEN INVADERS	Manic Miner
+ 1153	FLAG CATCHER	Watch those bombs!
+ 1154	BATTLE OF BRITAIN & WAR	Like Risk!
+ 1155	ANTEP	New
+ 1156	TOP SECRET	New
+ 1157	MASHIE NIBLICK GOLF	Golf
+ 1170	ASSASSINS GAMES V30	Another great collection
+ 1171	WIZARD WORLD	Great fun and graphics
+ 1172	LEEDINGS	Similar to Lemmings
+ 1174	DONKEY KONG	Great conversion
+ 1175	FULL HOUSE	Play your cards right!
+ 1176	SPACE TRAX	Space game
+ 1177	TURBO THRUST	Good new Thrust game
+ 1186	RAID	Very similar to SWIV
+ 1187	X.F.I. & H-BALL	Like Tron
+ 1188	DOWNHILL CHALLENGE	Ski-ing
+ 1189	MEGABALL	Arkanoid Clone
+ 1190	PUGGLES	Remember Cuddly Cubert
+ 1193	OTHELLO	New
+ 1205	SANITY	Brilliant new game, slideshow & fab music

UTILITIES

No.	Title	Description
+ 678	SID V2.0	THE LATEST CLI IS A BLAST WITH THIS ONE
+ 797	TYPING TUTOR	MEASURES TYPING SPEED AND ADJUSTS LEVEL OF DIFFICULTY
+ 799	CLERK	FANTASTIC ACCOUNTS PROGRAM FOR BUSINESS OR HOME
+ 839	DESKTOP PUBLISHER	MAKE LEAFLETS etc WITH GRAPHICS + TEXT GOOD
+ 857	SUPERKILLERS	KILLS SADAM PLUS 171 MORE VIRUS'S LATEST
+ 840	TEXT PLUS V3.0C	WORD-PRO MENU DRIVEN AREXX SUPPORT THE BEST
+ 808	P.C. EMULATOR	RUN P.C. SOFTWARE IT WORKS COME WITH C.G.A. GFX NEEDS MS-DOS
+ 710	AMIBASE	POWERFUL EASY TO USE DATABASE WITH 4 MATHEMATICAL FUNCTIONS
+ 858	JR-COMM 1.02	THE LATEST VERSION OF THIS COMMS PROGRAM GOOD
+ 704	NORTH 'C'	UNPACK ONTO 2 DISKS COMPLETE 'C' ENVIRONMENT
+ 686	T.V. GRAPHICS	2 DISK BACKGROUND & FONTS FOR VIDEO ENTHUSIASTS ETC
+ 684	VIDEO APPLICATIONS	2 DISK VIDEO UTILITIES TO ACCOMPANY TV GRAPHS
+ 731	SMOVIE	AMAZING TITLE AND TEXT SCROLLER FOR VIDEO ETC
+ 688	DISK SALV	MUCH MUCH BETTER THAN DISKDOCTOR ON W.B
+ 681	BATTLEAXE ICON STUDIO	THE TOP ICON MAKERS AND EDITOR WITH SOME ICONS
+ 683	D.K.B. TRACE	EXCELLENT RAY TRACE PROGRAM
+ 650	QUICKBASE, LABELPRINT, VIDEO-LIBRARY, MENU	1 DISK GOOD VALUE
+ 703	GRAPHIC UTILITIES	TOTALLY PACKED WITH GRAPHIC STUFF
+ 781/2	DYNAMITE FONTS 1 & 2	2 DISKS FULL OF FONTS TO USE IN DPAINT ETC
+ 761	MEGA UTILS	50+ YES OVER 50 USEFUL UTILITIES
+ 725	ANTIFLICKER	STOPS SCREEN FLICKER IN INTERLACE MODE
+ 885	AUDIO MAGIC V1	FULL OF USEFUL MUSIC SEQUENCERS & SOUND RIPPERS
+ 886	AUDIO MAGIC V2	IF YOU HAVE THE ABOVE, YOU'RE BOUND TO WANT THIS
+ 888	DEVPAC SOURCE CODES	LOTS OF PROGRAMS FOR YOU TO EXPERIMENT WITH
+ 890	GELIGNITE FONTS	MORE GREAT LOOKING FONTS TO USE IN YOUR PAINT PACKAGE ETC
+ 892	MESSY SID II	AN UPDATE TO THIS GREAT FILE CONVERTER, AMIGA <> PC
+ 844	LITTLE BENCH 2.0	A GREAT WB REPLACEMENT, WITH LOTS OF USEFUL UTILITIES
+ 846	MAGNETIC PAGES	MAKE YOUR OWN MAGAZINE ON DISK, OR TUTORIAL etc
+ 1001	MED V3.2	THE VERY LATEST AND BEST MUSIC PROGRAM
+ 1002	ESSENTIAL UTILS III	A GREAT COLLECTION OF UTILITIES
+ 1003	ASSASSINS MEGABOOT	MASSIVE COLLECTION OF BOOT-MAKERS
+ 1004	MR BACKUP V5.02A	BACKS UP YOUR HARD DISK IN MINUTES
+ 1006	AMIGA PLUS UTILITIES	SPECIALLY FOR THE A500 PLUS
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AM/FM

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+1126	CATACOMBE (GAME)	GRAPHIC ADVENTURE
+1127	COLLOSAL (GAME) CAVE ADVENTURE	
+1128	ADVENTURE GAME CONSTRUCTION KIT	
+1129	C.V./RESUME MAKER	GET THAT JOB
+893	AMIBASE PRO	LATEST AND GOOD
+894	UEDIT	TEXT EDIT
+895	AMICASH	
+899	P.SUIT	DISK CATALOGUER
+960	E-TYPE 2	COULD IT BE POSSIBLE
+1102	TEXT ENGINE 3.4	NEW
+1108	THE MAIN EVENT	(EVENT/HANDLER GOOD I PAID)
+1078	ELECTRO CAD	OBVIOUS
+1080	DATA EASY	
+1096	TURBOQUILL 1.1	WORDPRO
+1070	TEXT ALOAD	DOC VIEWER WITH SPEECH
+1099	ZERO G SAMPLES	PURE SOUNDS
+1097	LITTLEBENCH 1.3	A LITTLE WORKBENCH
+1091	ARP V1.3	
+1090	MEGA VIRUS KILLERS	
+1089	OPTI UTILS 2	
+1087	IFF CONVERT	
+1086	SAS UTILS 1	
+1084	CULPRITS UTILS	
+1082	WORKBENCH HACKS	
+1081	SUPER C	
+1083	32 HELPFUL UTILS	
+1093	EYE OF THE BEHOLDER HINTS MAPS & SOLUTIONS	
+1103	BRAINSTORM MUSIC DISK	GOOD SOUNDS
+1131	E-TYPE 2	GREAT GAME
+1136	CANON & HP PRINTER DRIVERS	
+1137	STAR & CITIZEN PRINTER DRIVERS	
+1138	PRINTER & PLOTTER DRIVERS	HUGE SELECTION
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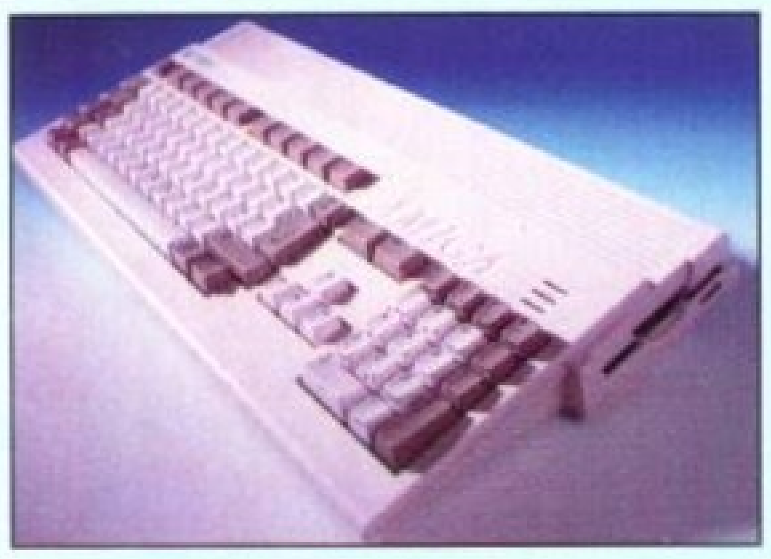
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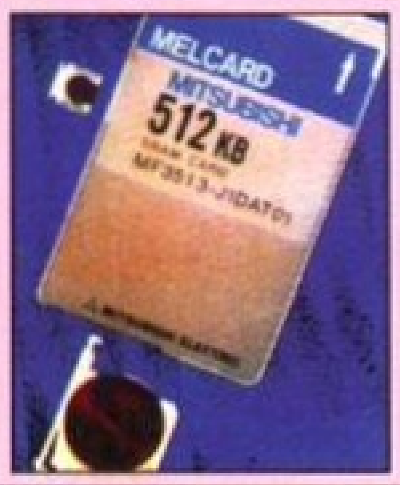
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SOFTWARE

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The greatest C Compiler/Environment

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MODEMS/COMMS

The Supra-Fax Modem

V.32 bis (14400 baud!!!)

Allows you to send and receive fax messages. This new modem from Supra has full 1400 baud capability. Spec includes V.32bis, V.32, V.22bis, V.22, V21, MNP2-5, V.42, V.42bis, Class 1 & 2 commands, 9600/14400 Group 3 Fax. Includes free comms software and modem cable. £249.99

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(upto 9600 BPS)

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PERIPHERALS

New for Amiga

Triax Turbo Touch 360

Fantastic New Console Type Control



A radically new style of hand-held controller from Hornby. Feather-touch direction pads mean no buttons or switched. We believe this will improve gameplay and provide superior control!!

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High quality 8-bit stereo sampler. Sample upto 51,000 samples/second in stereo. Special effects inc echo, mix, filter, re-sample & much more. Works with any Amiga inc 1200, 4 track sequencing software with midi support, create SoündTracker compatible and stand alone song files with the great DSS software.

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Switch-It is the CURE! £22.95

If you have an A500 Plus and you are fed up with incompatible software, or you have upgraded to one of these machines and all your old software fails to work, then here is your answer. Includes audible switcher, keyboard controlled. (See box right for ROM prices). Needs required Kickstart chip.

ACCESSORIES

Item	Price
100 Capacity Disk Box	£7.99
Mouse Mats	£3.99
Modem & Null Modem Cables	£9.99
Amiga to Scart Cables	£9.99
Disk Drive H/Clean Kit	£3.99
Printer Cables	£6.99
Rom Sharer 500	
Keyboard Operated Audible	£22.95
Kickstart 1.3 Rom Chip	£21.99
Kickstart 2.04 Rom Chip	£34.99

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When ordering by post, please make cheques payable to BattleAxe, and include Name, Address, Postcode and if possible a daytime telephone number along with your order requirements. Thankyou.



Machine mayhem with a big gun. Don't expect to last more than 10 seconds until you've practised a bit.

HARD DISK MENU — UTILITY

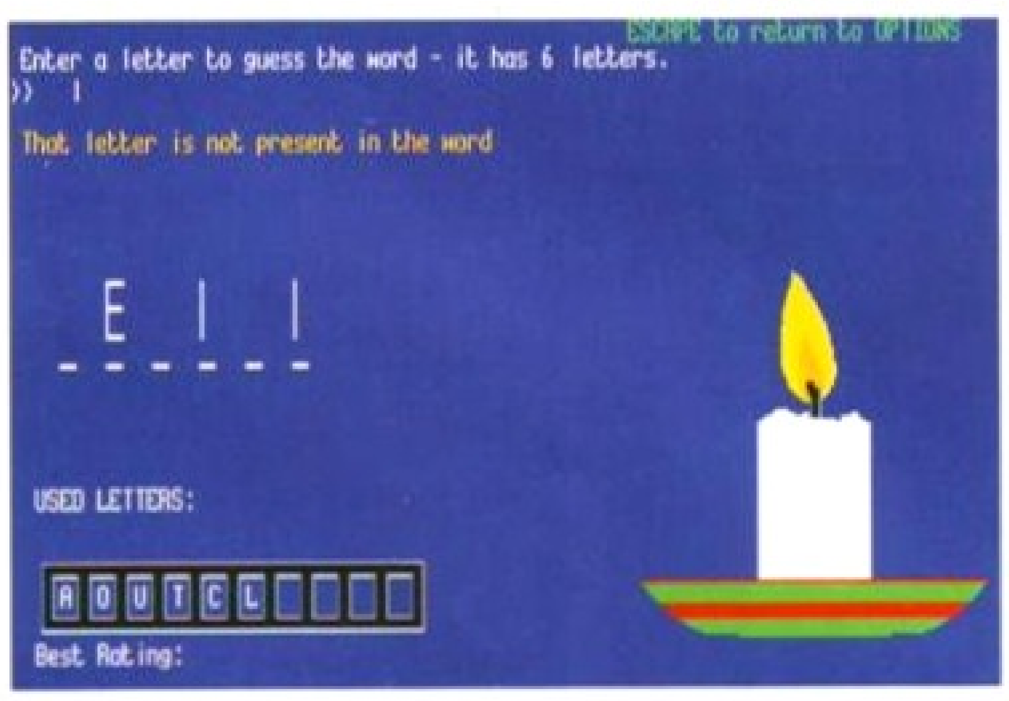
DEJA VU L/118

This is MA Sewell's (see bottom left on previous page) most useful program yet. *HDM* sets up a simple menu on your hard drive, to run programs simply by pointing and clicking at the name, rather than wading through heaps of directories and drawers.

This sort of utility is fairly common, but this one has good documentation, a separate installer for NTSC systems (how often do programmers understand the difference?) and is easy to use. Hard disk users who don't have a menu system yet, do look at this but remember that it uses a bit of memory, so really memory-intensive programs tend not to work unless you have a couple of megabytes of spare memory.

LEXESS — GAME

NBS 13/G6



Hangman anyone? *Lexess* knows about 1,000 different words to test on, and is very easy to play.

Nice little freeware version of *Hangman*. Big deal, I hear you say, there have been computer *Hangman* games for donkey's years. Well, the reason I mention it is that for a start, it's written in *AMOS*, and for another thing, it's very, very easy to use. If you're a programmer looking for good examples of programming that are easy on the end user check this out. Well done Ashley Willis and Christine Perkin.

FINAL FRONTIER 3 — MAG

CYNOSTIC PD D00003

Four disks packed to their write-protect tabs with *Star Trek*-related material. Simon Plumbe, the editor, has boldly gone on a crusade to broadcast all information relating to the crew of the Starship Enterprise. The only slightly spurious inclusion is a music track by Echo of LSD, but as it's rather good I'm not complaining. If you want fake but funny scripts, latest news on Paramount's continuing *Star Trek* releases, listings of fan clubs, plus lots more, get this and enjoy.

MONEY SPINNER — GAME

DEJA VU L/110

This game is unique. It shares certain similarities with many different games, and combines them all in a subtle blend. The closest game I have seen to it is *Rotox* – you control a ship in the middle of the screen, and the playing area spins around you. The idea of the game is simply to get back to Earth – your ship made a pioneering trip into hyper space, and the natives really aren't friendly.

Graphically the game is pretty dire, with flickery, wobbly graphics and some jerky animation. The actual in-game graphics are poor, but the sounds and odd playability make up a little for this deficiency. If you want a weird, weird game, get this – the graphics are not amazing but the gameplay is quite original.

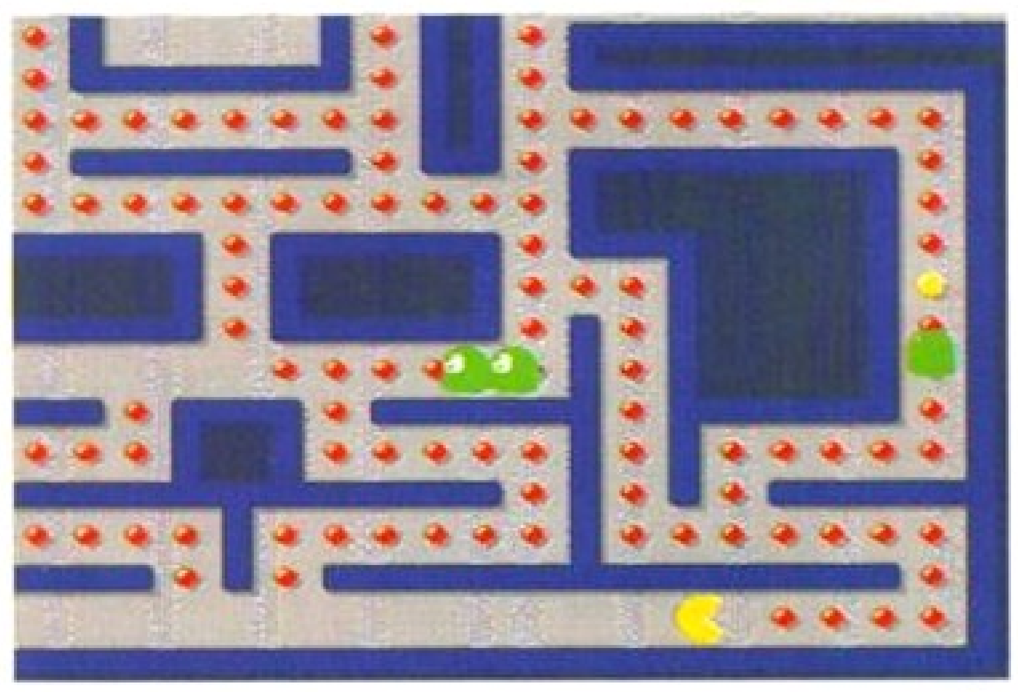
Personally, I reckon that the author, Neil Murphy, could be the next Jeff Minter if he stops using *AMOS* and just uses machine code. Bruce Murphy better keep practising with *Deluxe Paint* too – I mean, he's a better artist than me, but that's not really saying much. Quality, not quantity would have made for an even better game.



Zapping, spinning, twisting, turning and grabbing. Five basic game elements that are very hard to put down.

PACMAN 92 — GAME

STARTRONICS 323



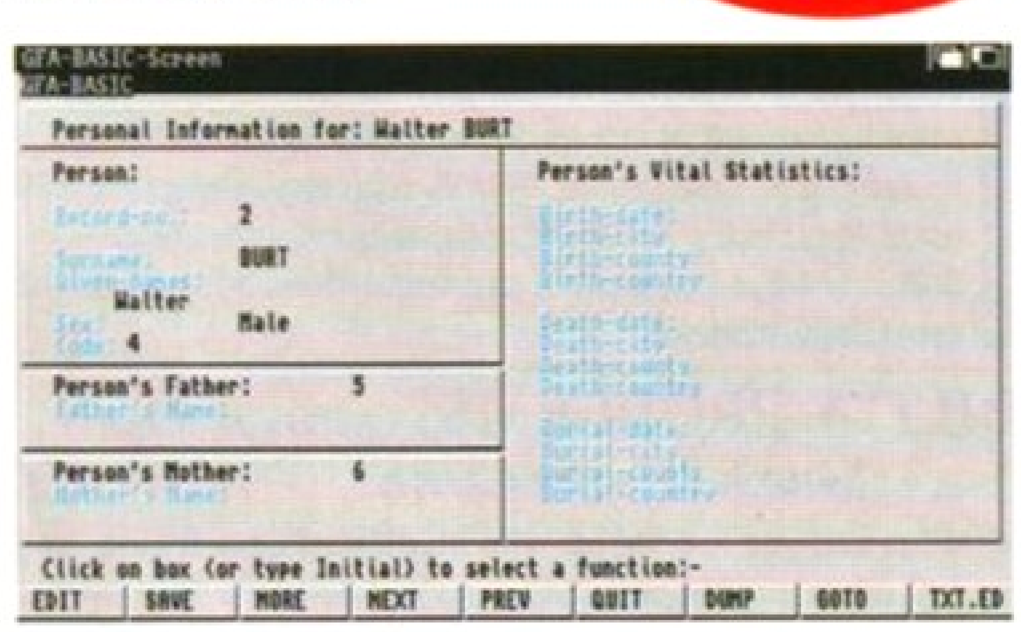
Pacman, the Pizza with a slice missing. Ancient game, still loads of fun, especially with the game changes.

This is a new one for me, but I am assured that it's quite an old release now. *Pendle Europa Super Pacman 92*, to give it its full title is a rejigging of the famous partial pizza that can't stop eating. The playing area is bigger than the screen, and smoothly scrolls to show the local ghost activities. A pity there's only three types of ghost, but the way they appear is novel.

Each of the ghosts has different behaviour patterns which makes it a very different kind of *Pacman*. The mix of ghosts and mazes means you need more skill than before. Also, the power pills don't last long, but you can avoid the ghosts in the tunnels. Nostalgic fun.

AGENE V4.34 — UTILITY

AMIGANUTS



AGene is a bit less powerful than before (less records per disk) but you can store more facts about the individuals.

Genealogy is the study of family trees, and is a pastime where a computer can be extremely useful. This is the best current program for the job, and has been updated many, many times (as long-term readers will know). It's indispensable for recording ordinance information for members of the Church of the Latter Day Saints (Mormons, to use the common term).

The new features include Soundex (which is a system for cataloguing similar sounding names, like Smith, Smyth and Smythe, as used by various national revenue and census organisations) and Gedcom (so that you can swap data with similar programs on the Mac and PC). Also, the ADoc on-line help system by M Denis Gronelle has been implemented – with M Gronelle's permission – to help new users find their way around.

TOP 10 GAMES AND UTILITIES

Every month we print the top 10 games and utilities from a PD library. This month it's the turn of...

STARTRONICS PD

1. Pacman 92
2. Leap!
3. Cybernetix
4. Assassins 040
5. Dragon Tiles
6. Bounce 'n Blast
7. Raid 3
8. Mental Image Games 2
9. Soccer Cards
10. CLR CLE011 Let's Learn

WHERE TO GET THE DISKS IN THIS ISSUE

AMIGANUTS: 12 Hinkler Road, Thornhill, Southampton

CRAZY JOE'S: 145 Effingham Street, Rotherham South Yorkshire, S65 1 BL. 0709 829286

CYNOSTIC PD: 85 Wyken Croft, Coventry, CV2 3AD. 0203 613817

DEJA VU SOFTWARE: 7 Hollinbrook, Beech, Wigan, WN6 7SG. 0942 495261

EDDIE BARRY: 32 Glenmore Walk, Hilden, Lisburn, N Ireland, BT27 4RY

NBS: 1 Chain Lane, Newport, Isle of Wight, PO30 5QA. 0983 821983

STARTRONICS PD: 4 Arnold Drive, Droylsden, Manchester, M35 6RE. 061-370 9115

United Public Do

The innovators

Look out for the CLR logo!

THE BEST SELECTION OF PD IN THE UK !

GAMES

PG003 AIR WARRIOR Good flight Sim +
PG006 ANTEP & SLOT CARS role playing game+ Y
PG008 ASI 1 Tanx, Rollerpede, Avatris Amigoids etc+
PG009 ASI 2 Invaders,Bally 2,Missile command etc!+
PG010 ASI 3 Megaball & Drip Superb !+
PG011 ASI 4 Frogger Go Moku,Cracker Jumpy etc!+
PG012 ASI 5 Raid, Go Looly & Retaliator+
PG013 ASI 6 Pacman Downhillchallenge Welltrix etc!+
PG014 ASI 7 Moonbase, Trix,Nightworks Clauderunner!+
PG015 ASI 8 Airace2,Hball,Snakepit & Numberfumbler!+
PG016 ASI 9 Features Battle pong & Blizzard! +
PG017 ASI 10 Escape, Pipeline, Pickout & Sys!+
PG018 ASI 11 Dad, Connex,Reversi Towers & Trippin+
PG019 ASI 12 Llamatron, Car, Powerpong. Fab!!+
PG020 ASI 13 Twintris, Squamble,Block it,Ball etc!+
PG021 ATIC ATAC Really playable ! + Y
PG024 BLACKJACK Good card game !+
PG026 CASTLE OF DOOM Excellent! Get it + Y
PG028 COLOSSUS & WORLD Fab adventures !+ Y
PG029 CROSSWORD COMPILER As it says !+ Y
PG032 DRAGONS CAVE D&D style game Mega+ Y
PG034 ETERNAL ROME Strategy & DOMINOES+ Y
PG046 HACK Great text adventure-infocom style! +Y
PG047 HOLLYWOOD TRIVIA Nice Trivia Game! +
PG048 HOLY GRAIL One of the best Text adventures+ Y
PG051 KILLER CARS Great filled vectors game!+ Y
PG053 LARN A superb text adventure game + Y
PG059 LORE OF CONQUEST space trading D&D game Y
PG062 MENTAL IMAGE 1 Gridrunner invaders & rebound+
PG068 NO MANS LAND Hi tech war game-shoot em up. +Y
PG071 POM POM GUNNER Like beach-head on the 64+Y
PG072 PROPERTY MARKET Become a millionaire !!!
PG074 RETURN TO EARTH Elite space trading game! +Y
PG076 SEVEN TILES Speedball type game-MEGA!
PG079 SEALANCE A submarine strategy game +Y
PG080 SERENE Good quality shoot up!+Y
PG081 SERENE II Follow up to the above game +Y
PG085 STARFLEET Nice game done in SEUCK!+ Y
PG094 TRAIN CONSTRUCTION KIT make own tracks+Y
PG101 THE INSIDERS CLUB Stocks & shares game
PG105 WIZZYS QUEST Fab arcade adventure game!+Y
PG108 ASI 14 ChinaChallenge2 & Amiga Columns!+
PG110 SUPER SKODA CHALLENGE Nice car racegame!+Y
PG121 A500+ GAMES PACK 21 games to run on a plus+Y
PG124 TOTAL WAR Great new Risk type game,ok plus!+Y
PG127 AIRMANIA Super platform game from Addware + Y
PG131 ATLANTIS A nice looking strategy game! +Y
PG132 ASI 15 Battlecars Lettrix & Mambamove!
PG133 ASI 16 Wastelands, Mission X, Pacman +
PG134 ASI 17 Tomcat, Defenda, Jetman Bugblaster+
PG135 ASI 18 Henry in Panic Skyflyer Omega race!+
PG136 ASI 19 Growth,FranticFreddy,Biplane & more!+
PG138 BATTLE OF BRITAIN & WAR strategy war games+Y
PG139 DUNGEONS OF MADROJ Excellent D&D game+Y
PG140 MIND GAMES Stacks of fun with this !Y
PG141/3 SWORD OF WARLOCK RPG adventure 2drives
PG146 ASI 20 Microbes Hollywood trivia Coin drop +
PG149 A NIGHT AT THE TOWN Witty text adventure+Y
PG153 WAR very good strategy/arcade game+Y
PG155 ASI GAMES 21 Zeus Tettrix Battlements Dragntiles+
PG156 ASI GAMES 22 Lemmingoids,Wizzys quest Duel etc+
PG157 ASI GAMES 23 Quick money,BIP,Interferon Arcadia+
PG164 GAME TAMER 2.3 joystick tester & 268 cheats+Y
PG166 RAID III Wicked new shootemup !!! +Y
PG167 SERENE III From the author of Raid !!!+Y
PG169 ASI GAMES 24 Revenge Dux Croak 3d maze etc!+
PG170 ASI GAMES 25 Mr Brick,Copper,hemeroids,E Type+
PG171 ASI GAMES 26 Superpacman 92 Smash tv Ashido
PG172 ASI GAMES 27 Addictive card games. Really good!+
PG174 AMOS CRICKET Shareware cricket game,1 or 2plr+
PG175 SPACETRAX 2 player shoot each other up game+Y
PG176 TECHNOBAN GAME Quite a nice puzzle game! +Y
PG177 HELLZONE Stunning R-type clone-GET THIS! +
PG178 MENTAL IMAGE 2 Three Excellent new games +
PG180 SECTOR 1 A nice game similar to alien breed+Y
PG181 STRIKEBALL Baseball type game done in Amos +Y
PG182 ETHOS Simple graphical adventue Sinbad style+Y
PG183 CATACOOMBS great D&D style game. VG.GFX +Y
PG184 FATAL MISSION Very good Shootemup game +
PG186 ASI 28 Doody, DrMario, Invaders2, Madbomber2+
PG187 ASI 29 DOG, Rome, Nova, B-Bal, Atax, Quadrix+
PG188 ASI 30 Bounce & Blast, Total Fire Tank attack!+
PG189 SPACE RESCUE Super scramble like shoot em up!+
PG190 TOP SECRET An exellent quality platform game!+
PG191 ACT OF WAR New space strategy game! +Y
PG193 MASHIE NIBLICK Yes,a golf game for your Amiga+Y
PG195 KLAKTRIS Superb quality tetris type game!+
PG197 ANDYS AMOS GAMES 6 good games on here!+Y
PG198 AIRPORT Now you control an airport! +
PG199 CASHFRUIT Nice fruit machine game! +Y
PG200 ALL ROUNDER CRICKET New cricket game!+Y
PG201 APPLE CATCHER Simple fruit collection!+Y
PG202/3 IRON CLADS Good strategic war game!(2)Y
PG204 THRALLBOUND Text adventure with graphics!+Y
PG205 SOCCER CARDS Football managing game!+Y
PG206 ASI 31 Arazmaz,Crazy pipe, revolution etc!+
PG207 ASI 32 Blob, Sector one & Firefighter! +
PG208 ASI 33 Hyperball & War! +
PG209 ASI 34 Trailblazer, Yelp, Obc Rushour! +
PG210 ASI 35 Poing, Snakepit, Cybernetix etc!+
PG211 ASI 36 Mother lode, Wonderland, Kong etc!+
PG212 ASI 37 Klaktris, Ghostship, Paccer etc!+
PG213 ASI 38 One on One,Baldy,Skyflyer2,Transplant!
PG214 LEGEND OF LOTHIAN Superb Ultima type game!!+Y
PG215 ASI 39 Lots of card games on this disk! +
PG216 ASI 40 Disk full of sliding puzzle games!+
PG217 ASI 41 Pacman deluxe, Hellzone Leap II etc+

EDUCATION

All ok on A1200!
PE001/5 EDUCATION SET science programs for ages 11+ +
PE006 KIDSPAINT Fab little talking colouring book+
PE007/8 LEARN & PLAY Maths, spelling etc. 5-10 yrs +
PE009 STORYLAND 2 Save toyland from the witch! +
PE010 TOTAL CONCEPTS ASTRONOMY Book on a disk.+
PE011 TOTAL CONCEPTS DINOSAURS Book on a disk+
PE013 SIMON & SPACE MATHS Talking maths program
PE014 SPANISH, FRENCH, GERMAN TUTOR Translator +
PE015 TREASURE SEARCH find the lost treasure ! +
PE016 COLOUR THE ALPHABET learn letters & colours! +
PE018 TYPING TUTOR, Superspell Budget & Mscalender! +
PE019 DUNKS DTP A sort of DeskTopPublisher for kids +
PE020 MATHS DRILL Good maths disk for the young! +
PE021/4 SCIENCE Very good four disk set!+ (4)

BUSINESS

All ok on A1200 except PB006!!
PB001 AMICASH bank management program+
PB002/3 ANALYTICALC Superb spreadsheet!+ (2)
PB004 ASI LABEL PRINTERS 3 of the best+
PB005 BANKIN control your cheque book! +
PB006 BUSINESS CARD MAKER Nice program+
PB007 CLERK Complete accounts package+
PB008 DESKTOP PUBLISHER Simple to use +
PB009 FLEXYBASE DATABASE Address keeper+
PB010 JOURNAL Keep track of finances
PB011 MISC.BUSINESS Geotime, Grocery list, Calc
PB012 QBASE Simple 8 field database
PB013 QED Simple & effective text ed+
PB014 RIM DATABASE Fully relational !!+
PB015 TEXTPLUS V3.00 The BEST Wordprocessor +
PB016 UEDIT ISSUE 3 NEW VERSION Text Editor+
PB017 VISICALC SPREADSHEET Simple to use+
PB018 WORDWRIGHT Wordpro with spellchecker! +
PB019 BUSINESS LETTERS contracts, letters + more+
PB020 TEXT ENGINE 3.4 NEW Version !!! +
PB021 AMIBASE PRO. Powerful easy to use Dbase +
PB022 BBASE II v5.5 A fast & easy to use database+
PB023 FORMS REALLY UNLIMITED form creation prog+
PB024 LAST WILL & TESTAMENTS Just in case !+
PB025 EDWORD Brand new wordpro - V.good +
PB026 AGRAPH Superb Program graphing data +
PB027 BOILERPLATE Business letters & Wordpro +
PB028 LITTLE OFFICE Intergrated Wpro,Sst,Dbase,Gfx+
PB029 ADDRESS PRINT Good label printing program! +
PB030 THE MONEY PROGRAM Home accounting! +

UTILITIES

(Note: "Y" = ok on A1200!)
PU002 A-GENE Good geneology program + Y
PU004a/b A64 EMULATOR NEW VERSION 2.0 (2)
PU005 AMATEUR RADIO 1 Interest to radio hams + Y
PU010 ARP 1.3 Amigados replacement project! +
PU012 ASI GRAFFIX UTILS graphics convertors etc+Y
PU013 ASI BOOT UTILITIES bootblock utilities + Y
PU015 BIORYTHMS, STARCHART 2 Good programs+ Y
PU021 C-LIGHT RAY TRACER Good program+ Y
PU022 CHEMESTHETICS molecule displayer + Y
PU036 CURSER BASIC COMPILER Just what you need!+ Y
PU037 D-COPY The best PD disk copier & more + Y
PU039 DBW The foreunner to Skulpt 3D !!! + Y
PU040 DEMOLISHER 168 UTILTIES - MEGA !+ Y
PU047 DOPE INTROMAKER Make your own intros+
PU048 DYNAMITE FONTS II CutNPaste fontscreens Y
PU049 DYNAMITE FONTS More CutNPaste Fonts Y
PU055 ELECTROCAD DEMO circuit designer +
PU056 EXILE FONTS Excellent CnP fonts+
PU058 FONTS AND RAM MANAGER BIG video fonts+
PU059 FONTS & SURFACES Backdrops & fonts+ Y
PU062 GRAPHICS UTILITIES Various misc. programs+Y
PU063 HAMLAB Convert VGA PC >IFF/HAM + Y
PU064 HARDDRIVE UTILS MRBackup & FixDisk & more+Y
PU065 ICONMANIA Program icons & more !+ Y
PU066 ICONS Cramm packed with icons !+ Y
PU067 IMPLODER V4.0 Megacrunching Util+ Y
PU071 JR COMM 1.02 Modem users comms package Y
PU072 METALLION UTILS Font Editors & more utils+ Y
PU073/76 KING JAMES BIBLE Old&New testaments (4)+ Y
PU078 M-CAD Hires design package. Excellent + Y
PU080 MESSY-SID Read/Write PC Files, Brilliant!+ Y
PU083 MORSE PROGRAMS for the radio hams. Y
PU086/7 NORTH C 1.3 (2) Complete C compiler & libs+ Y
PU088 NORTH C 1.3 This is the packed 1 disk version!+Y
PU089 PASCAL COMPILER needs good CLI knowledge+ Y
PU091 PENDLE 200 MEGAUTILS An essential collection+ Y
PU095 PRINTER DRIVER GENERATOR & new drivers+ Y
PU096 PRINTER DRIVER UTILITIES Various utils etc. Y
PU097 PRINT STUDIO V1.25 Prints pics & text etc.+ Y
PU108 ROT A simple 3D drawing package.Very popular.+Y
PU109/10 (2 disk) Structured clipart for Ppage + Y
PU112/3 SOMETHING FOR NOTHIN Video Utils&Fonts+ Y
PU115 ST EMULATOR Run Atari ST software !! 2 Drives
PU117 SUPERKILLERS Virus Killers! You need this! +
PU121/2 TV GRAPHICS Dpaint backdrops&Fonts+(2) Y
PU124 ULTIMATE ICONS Iconmaster,Iconlab,+ Y
PU129/30 VIDEO APPLICATIONS Video utilities+ Y
PU136 ZX SPECTRUM EMULATOR Now with sound +
PU139 GRAPHICS CONVERTERS PC>AMiga gfx Converter
PU140 LITTLEBENCH File copier & utils Dos2 only
PU141/2 TAROT II Learn about your stars !+ Y
PU143 OPTIUTILS 1 Crammed full ! Get it+ Y
PU144 OPTIUTILS 2 Get this disk too ! + Y
PU145 OPTICOMMS 1 Ncomm 1.921 Lharca, Zoo Arc+ Y
PU149 ELECTRONIC PROTOTYPER Veroboard designer Y
PU150 FOOTBALL LEAGUE ED Update league positions Y
PU151 BROTHERHOOD UTILS 1 Dcopy,Scenery,Qed +Y
PU152/66 CLIPART SET: 15 Disks of the BEST clipart +Y
PU167 MULTI-PLOT Superb data plotting program ! +
PU169 GELIGNITE FONTS CutNPaste fonts+
PU170 P-SUITE Disk magazine maker+Y
PU171 OPTICOMMS 2 Ncomm 2 & more +Y
PU172 WORDPOWER Solve Anagrams/Crosswords+ Y
PU174 ASTRO 22 professional astrology program! +Y
PU175 GELIGNITE FONTS II Excellent IFF fonts+Y
PU176 GELIGNITE FONTS III More of above!!+
PU177/8 BENCHMASTER Windowsbench & Messysid!!
PU182 STOCK ANALYST Technical analysis program+Y
PU183 AMYGEN Excellent geneology program+Y
PU184 PROCALC V1.0 professional calculator!
PU185/8 COSMOPOLITAN FONTS (4) Packed with fonts+Y
PU189 TRONIK VIRUS KILLERS 21 virus killers & docsY
PU191 LANDBUILDER fractal land generator+Y
PU192 SID 2 Get this ! directory util !!! MEGA!+Y
PU197 MOBED 2 Dpaint for Sprites & bobs+Y
PU198 VIDEO WIPES Masks & fades Dpaint 3/4 +Y
PU201 MALICE FONTS Excellent tiny fonts for Dpaint+
PU202 CYCLOPS Weird Plasma/fractal creator ! +Y
PU203 SCOPE 184 utils & clips for Ppage Y
PU205 PC TASK Wicked PC Emulator Get it !!! +Y
PU207 MULTISID Combine SID2 & Multidos(PC>AMIGA)+Y
PU208 ASI HANDYTOOLS 3 mega compilation of utils Y
PU209 FRED FISH CATALOGUE contains FISH 1 - 680 +Y
PU210 PCQ PASCAL Latest version of Pascal compiler+Y
PU211 AMIGA PUNT A horse race predicting program!+Y
PU212 PERM CHECK PLUS a pools prediction prog Y
PU213 RACE RATER Another horse racing program!! +Y
PU214 DIR WORK A Sid type file copying program! +Y
PU215 CAPTIONATOR Superb shareware video titling!+Y
PU217 BROTHERHOOD UTILS 2 utilities for the plus!+ Y
PU218 ORDER Excellent demo of commercial Dbase+Y
PU219 WBHACKS+ collection of hacks for + owners+ Y
PU221-225 8 COLOR ICONS Hundreds of new icons +Y
PU226/7 C-EYES FONTS For use in Dpaint, WB, etc.(2)+Y
PU228 PROBABLY RIPPER Create disks easily with this!+Y
PU229 JPEG 24 bit graphics compression util disk! +Y
PU230 MORE PRINTER DRIVERS new printer drivers!+Y
PU231/5 PAGESTREAM FONTS 5 disks super fonts!+ (5)Y
PU236/7 SCOPE197/8 Adobe type fonts, 2 disks full! +Y
PU238/9 M.O.R.C. Mouse operated rune caster,oracle !+
PU240 FREECOPY V1.4 powerful disk copying program!+Y
PU241 CALORIE BASE Useful for people on a diet!+Y
PU242 TEXTPLUS PROFESSIONAL 4 needs hard drive!+Y
PU243 ASPICE Circuit analysis program!+Y
PU244 BON APPETIT This is a recipe database program!+Y
PU245/256 C MANUAL Latest version on 12 disks! (12) +Y
PU257/61 PAGESTREAM FONTS 2nd set of fonts!+Y
PU262 RICHARD SMEDLEY COMP II Mortgages etc!+Y
PU263 LYAPUNOV Fabulous & unusual fractals!!+Y
PU264/8 OUTLINE FONTS For Pro pagev3 ONLY!!+Y

ANIMATIONS

PA031 BASKETBALL A basketball player 1 Meg! +Y
PA039 ERIC-S AMY VS WALKER Cute & sexy! 1.5M Y
PA040 ERIC-S BATMAN vs JOKER Very funny!!!+Y
PA042 ERIC-S COYOTE STRIKES BACK 1mg too! +
PA043 ERIC-S MORE AEROTOONS Very witty !!!+ Y
PA045 ERIC-S STEALTHY II Mig-29 vs Stealthy !+Y
PA046 FRANKLYN THE FLY Day in the life of a fly! +
PA048 GYMNAST ANIM Gymnast swings on bars! +Y
PA053/4 LIGHT CYCLES (2) Tron animation+
PA056 MAGICIAN II Good RT animation+Y
PA060 NEWTONS CRADLE RT animation +
PA065/68 REAL 3D (4) Superb of the program+ Y
PA072 THE JUGGLER A classic amiga demo!+ Y
PA074 THE WALKER vs The Helicopter - Mega !+ Y
PA075 THE WALKER vs A2000 A classic ! + Y
PA082 TIN TOY ANIMATION Ray traced tin soldier! +Y
PA085 JET ANIMATION Fractal Flight but better! +Y
PA086 FRACTAL ANIMATION full screen low flying anim+Y
PA090 TOO MUCH 3D Ship flys out of monitor!! + Y
PA091/3 GAS TURBINE, STEAM & PETROL ENGINE (3)+Y
PA094 AMY JOGS,WALKS & SNEEZES by E Schwartz! +Y
PA095 HOW TO RUN INTO A WALL by Eric Schwartz! +Y
PA097 SMALL STATION AT KHERNE New 1mg version+Y
PA098 EASTER ISLAND ANIM A nice fractal animation!+Y
PA099 ATF AGILITY new ES anim, very witty as usual+Y
PA100 VTOL CONTEST Check out this new ES anim ! +Y
PA101 DOLPHIN DREAMS Great Dolphin anim! + Y
PA102 BATTLE OF BRITAIN Amusing short anim!+ Y
PA103/4 KINGFISHER 2 Superb bird animations!+ Y
PA105 TOR ANIM Dog jumps out of screen!+ Y

AGATRON

All ok on A1200!
AGA01 RED LOTUS Spinning down the road. Fantastic !+
AGA03 STAR TREK - Shuttle fly past - Great ! 1m +
AGA09 STAR WARS - Fighter fly by, impressive 1m +
AGA10 STAR TREK - Enterprise in dry dock. Incredible+
AGA20 Huey 2 A helicopter leaving a landing pad.+
AGA21 ENTERPRISE DOCKING WITH SPACE STATION+
AGA22 ENTERPRISE APPROCHING stunning anim ! 1M +
AGA23 FLEET MANOEVRE Stunning animation! 1m +
AGA24 KULI PEN animation & Ping pong. Great! 1m +
AGA25 THE RUN , a suberb car chase 1mg +
AGA31 PORSCHE anim rising out of table 1 mg. +
AGA33 PROBE Bird of prey animation & Klingonhit! 1m+
AGA35 SPACE PROBE, great anim of probe zooming off!+
AGA36 BIRD OF PREY, loop the loop animation 1m +
AGA37 TOBIAS GOES KNACKERS - Check this out ! 1m +
AGA38 TOTALLY WICKED ! Shuttle & Enterprise (2 MEG)

POWERANIMS

PP001/2 ANTI LEMMINGS (2) This is Brilliant! 2M
PP003 AT THE MOVIES Cute anim of Amy squirrel 1.5M+Y
PP008/10 BUZZED (3) Great anim of wasp crashing! 2M
PP011/12 DATING GAME (2) Very witty!, Get it. 3.5M!
PP016 GULF WAR Another ES production! Good 2M! Y
PP021/24 LANDING (4) Tobias Richter poweranim 4M!
PP025/27 STATION AT KHARN (3) Incredible 2M demo Y
PP040/43 AT THE MOVIES II (4) Hilarious ! 1mg>3mg
PP044/45 AMY V WALKER II (2) Another witty ES demo 3M
PP046 SWEET REVENGE Coyote vs Roadrunner ! 1.5mg+Y
PP048/9 A DAY AT THE BEACH Stunning ! 2 Mg
PP050 UNSPORTING Wicked aerotoon by Schwartz+ 2M Y
PP051/2 CHARLY CAT Super Shwartzlike cartoon! 2mg.Y
PP053/4 CHARLY CAT AT THE BEACH 2nd fab anim 2mg!Y
PP055/6 APC MISSION Superb walker & tank battle 3mg!
PP057/9 CHARLY CAT CATCHES A CANARY Fab! 3MG.
PP060/3 CHARLY CAT MOUSTERMIND Great! 3.5MG.
PP064 DUNCAN DUNG BEETLE Unusual 2mg animation! Y
PP065/6 CHARLY CAT SNOWJOKE Latest anim 2mg.+ Y
PP067/9 SPEED LIMIT 3mg motorcycle race! + Y (3)

DEMOS

PD005 AMOS 3D DEMO Shows some great effects!+ Y
PD018 CHAOS ROCK Fab light show with fractals!+
PD068 PHENOMENA ENIGMA Absolutely brilliant!+ Y
PD076 PLASMUTEX Good plasma & great music +
PD094 SCOOPEX MENTAL HANGOVER A classic+
PD097 SILENTS GLOBAL TRASH Incredible!!+
PD130/34 ALCATRAZ ODDESSY Awesome!! Ok on 500+!
PD139 TRACKERS POWER & AGONY Unusual vectors! +
PD142 FINAL CONFESSION Music & Plasma effects!+ Y
PD143 CAT Silents & Crionics demo for cat club +
PD159 ANARCHY IN THE KITCHEN Some good FX Fab!+
PD162 ALCHEMY MARCHWITH Very good new demo+
PD164 DESIRE MENACE Good Psycho rave demo + Y
PD165 DARK DEMON Mega new demo .... get it+ Y
PD170 PIECE OF MIND Good 3D vector effects. +
PD171/2 SILENTS EXPOSE(2) Incredible Get it !+ Y
PD175 REFLECT SOUND VISION Super effects & music!
PD176 CHAMELEON DEMO Very nice vector demo!+ Y
PD177/8 TRSI TIME ZONE New, some good effects!+Y

MUSIC DISKS

PM001 100 GREATEST 64 TUNES 100 fab 64 tunes!+
PM010 AMEGA PARTY WINNERS Four WICKED songs+ Y
PM012 AMIGADEUS CLASSICAL Eine Kleiner etc. + Y
PM013 ANARCHY CAPTURED IMAGINATION Nice music!+
PM016 BEATLES SONIX Nice music + Y
PM018 BEATMASTER I LOVE TECHNOLOGY Rave disk+ Y
PM019 BRUNO's MUSIC BOX II Superb jazz funk music+Y
PM020/21 BRUNOS MUSIC BOX III Jazzfunk. Get it +Y
PM022/23 CLASSICAL MUSIC Bach, Handel etc +Y
PM027 D-MOB MUSIC 3 House music remix, good! +
PM030/34 DIGITAL CONCERTs 2-6 Excellent house/dance
PM035 DIGITAL DEBUSSY Fab Rob Baxter conversions!+Y
PM036 DIGITAL DEBUSSYII classic Debussy music!+ Y
PM058 MAG FIELDS CHIP FESTIVAL Full of chip music!+Y
PM059 MANIACS OF NOISE This is brilliant!+
PM082a/82b VIVALDI - FOUR SEASONS (2) V.Good !+ Y
PM090/91MOZART HORN CONCERTO 4 by H.Gammon+ Y
PM092 PIANO TUNES Nine piano songs- good + Y
PM096 STAIRWAY TO HEAVEN Rendition of the song+ Y
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PM114 UPROAR SPLIT BEAVER MIX rave megamix + Y
PM115a/b CHROME Brilliant music disks ! Y
PM121 NIGHTBREED MUSIC DEMO8 Rave music demo+ Y
PM122/4 PLAYSID 2 (3) You must get this !!!!! +Y
PM125 PLAYSID inc.RobHubbard, ManiacsOfNoise + Y
PM134/5 SOUNDS OF SCIENCE (2) Brilliant!+ Y
PM137 KEFRENS MEGAMIX II Very good !! dance music!+
PM141 HARDLINE MUSIC 7 groovy synth-style tracks+Y
PM150 DESKTOP HARPSICHORD RECITAL Classics! + Y
PM152 PARADISE: NO BRAIN NO PAIN Good for ravers!! +
PM153 BIZE: KILL DA BABE 6 tracks of rave music!! +
PM154 PULSE Yes, pulsating rave music again!! + Y
PM155 VINE G-RAVE 5 more good rave tracks!!!! +Y
PM157/8 HEATBEAT UPDATE 9 great songs here!+ Y
PM159 DECIBEL OVERLOAD 5 different tunes!+ Y
PM160 FUSION MATRIX 5 rave type tracks!+ Y
PM161 CYBERNETIX 19 songs packed on 1 disk!+
PM162 MORE MED TUNES Fab tunes by Alex Starrex!+Y
PM163 OCTASTUFF Some good 8 track tunes! + Y
PM164 OCTAROCK 3D More 8 track & 3d graphics!+Y
PM165/6 NUTCRACKER SUITE Super rendition!+ Y

SLIDESHOWS

PS002 ADVANCE HAM Really stunning !+ Y
PS008 AIRCRAFT SLIDE Pics of fighter aircraft!+Y
PS009 ASTRONOMY SLIDE very impressive !+Y
PS013 BORN TO BE FREE wild animals +Y
PS033 GERMAN RAY TRACE Superb See these !+
PS045 KELLY S/S Some quality HAM pictures.+Y
PS056 NEWTEK DYNAMIC HAM 640x512 4096 color pics+
PS062 NW DYNAMIC HAM Nik Williams Superb quality.+
PS067 RICK PARK'S ART Dpaint hires pics! + Y
PS072 SUPER HAM CARS This is a must-Mega!+ Y
PS086 SONIC 5 Superb D-HAM 4096 colour pics+
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PS103 DYNAMIC HIRES 2, 4 fantastic quality pictures!+
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PT014 MED MUSIC DISK As it says !+ Y
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AMOS PD

APD036 AMOS UPATER Latest updater !!! v1.34 + Y
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APD237 SHAPES Excellent kids game !+Y
APD257 CASSETTE LABELLER + MIXED SOURCE+Y
APD271 WIZARDS DOMAIN graphical adventure+Y
APD292 WAR OF THE FOUR graphic adventure game+Y
APD329 FRUIT MACHINE Good for the gamblers !+Y
APD347 NOTEBOOK & SHOPPING LIST Easy to use !+ Y
APD363 FAMILY HISTORY DATABASE Latest version!+Y
APD373 COMPILER 1.34 UPDATE Amos compiler !+

NEW!

PU269 CONSTELLATION Demo of shareware program!+Y
PU270 STARCAT2 Easy to use cataloge maker!+ Y
PU271 CLUMPY ICONS A disk crammed with icons+ Y
PU272 GOLF RECORDER Database for golf scores!+ Y
PU273 PC<>AMIGA Similar to Messysid, + docs!+ Y
PU274 TRONICAD V1.0 Electronic circuit design!+Y
PU275 FLIT Convert Autodesk anims to IFF+
PU276 BBBS A Bulletin board system! + Y
PU277 PROTEUS BBS Another comms program! + Y
PG218/9 CLASH OF THE EMPIRES Super strategy!+ Y
PE025 FRACTIONS & SILHOUETTES Good maths tutor+ Y
PE026 WW II FACTS Good historical program!+ Y
PE027 AMIGA BEGINNER Learn to use your machine+ Y
PD179/80 HALF BRAINS SUNSTORM Very good demo!+
PM167/8 JESUS ON E'S Crazy rave music demo!+ (2)
PS109 NAM VIETNAM Black & white slides! + Y
PS110 MIRAGE FORGOTTEN PICS Nice pictures!+ Y

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PD Demo Zone

HI TO MAFF, CLARE, SARAH, ALYN, STE, BRAINS, STEVIE, JANINE, H AND BIFFA.

Cut out the area above, make it into a loop with some Sellotape, then rotate it between your fingers. You now have an instant, Public-Domain scrolly greeting! Also, you could try moving it up and down for added effect. On with the demos...

WACKO METAMORPH

DEMO

DELTRAX



The best bit about this animation is that it doesn't involve 'Wacko Jacko' anywhere. Oh, what a giveaway.

A500 PLUS

A fascinating demo, featuring the good part of Michael Jackson's *Black and White* video – you know, the bit with loads of heads morphing into each other.

An inspired piece of animation which demonstrates the power of morphing at its best, nicely converted in monochrome to the Amiga.

As an added bonus the demo is completely silent, which is bad for MJ fans, but a blessing for the rest of us. Excellent.

JESUS ON E'S

DEMO

NBS,
DISKS 13/D9 & 10

Wow! Hey! Freakout! And other such terms which the young ravers of today use (honest)... *Jesus on E's* is an incredibly long megademo, featuring flashy graphics synchronised to a powerful rave-style soundtrack.

This type of demo has become quite popular lately, with the releases by *Extensors* and *Wildfire* reviewed in Issue 41, but this release by LSD beats them all hands down. They have managed to squeeze about 10 minutes' worth of wild music and graphics on to two disks, and this includes several pieces of digitised and retouched graphics. Also among the mish-mash of graphics are good examples of solid vectors, hand-drawn stills and some rather excellent animated full-screen images.



Lots of interesting animations abound here, like this one of the Utah Saints – other clips include The Wall...

If you're into rave, then take a look at the current Amiga rave demo scene – and this is far and away the best yet. Not for the God-fearing, or for epilepsy sufferers, but great for everyone else.

VOYAGE

DEMO

CYNOSTIC PD



The Walker stands atop a small hill in a parallax-scrolling backdrop. Not sure who'd plant a tree up there, mind...

Continued overleaf

THE AD

DEMO

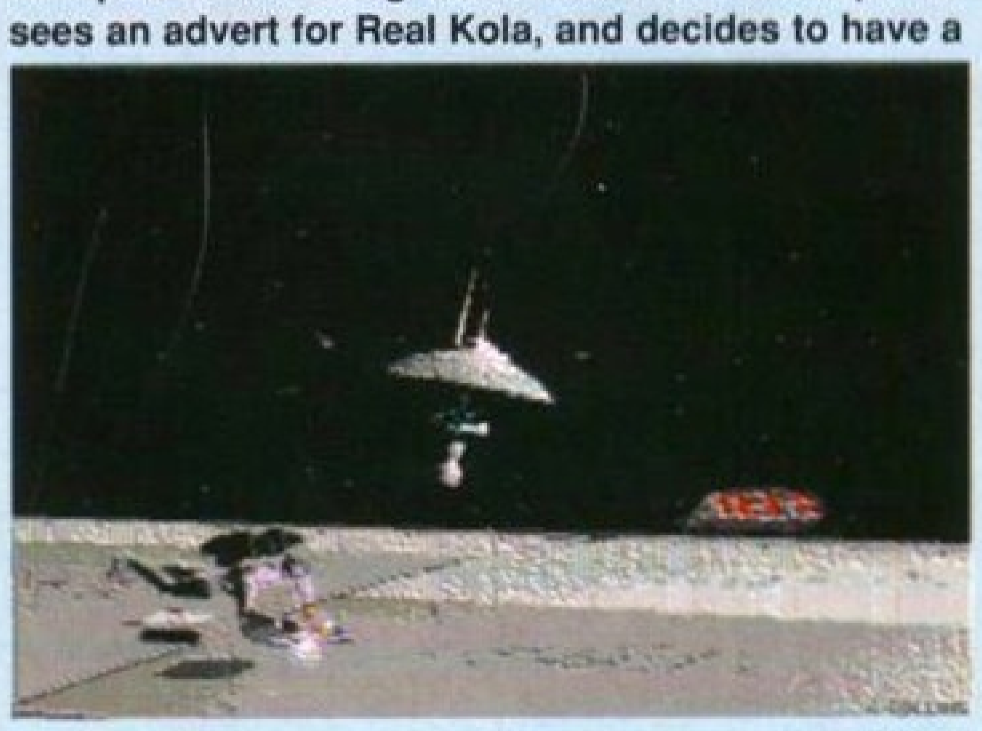
CRAIG COLLINS
(3 DISKS - NEEDS 3 MEG)

Now famous for his *Dolphin Dreams* and *Speed Limit* anims, featured in issues 40 and 41, Craig Collins has now come up with *The Ad.* This is another futuristic animation in the *Imagine*-rendered style of *Speed Limit*, and is set in the middle of the Kola Wars in deep space.

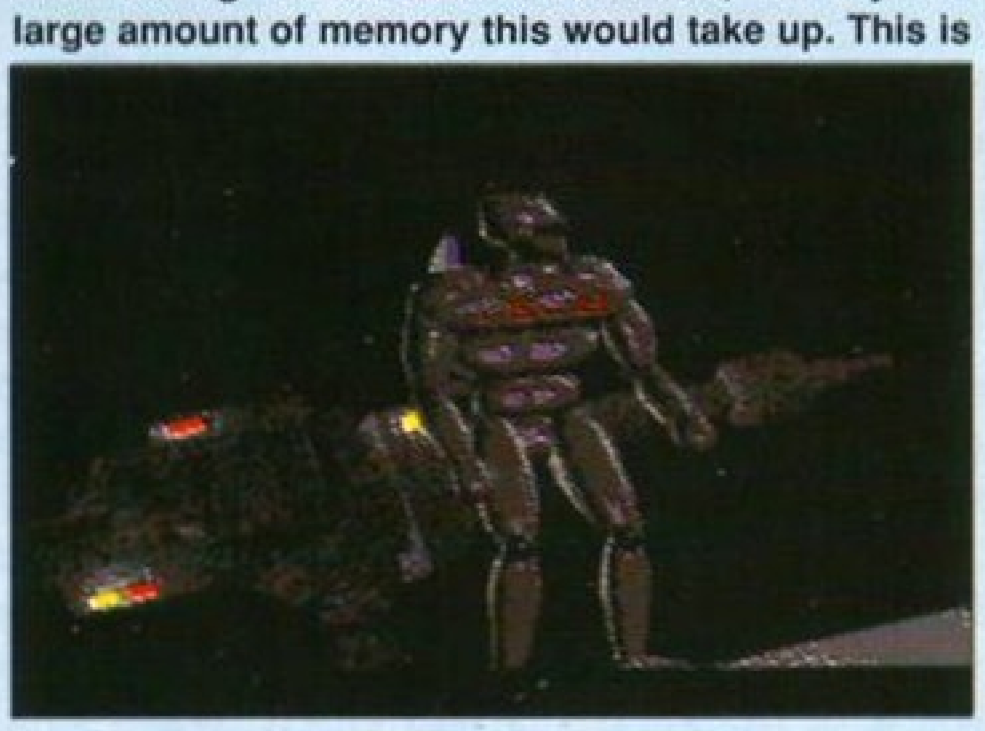
The beginning shows a spaceman busy welding a panel on a space station, while wearing a backpack advertising Koka Kola. He looks up and sees an advert for Real Kola, and decides to have a quick drink. After floating up to a passing ship he drops off on to a ship advertising Pep-C. The Kola Kops then spot him and follow him, creating a superb chase sequence. He grabs on to a passing taxi cab, then drops off at a Tup Water machine – where he eventually gets his drink. The style is similar to the famous 'Lady loves Milk Tray' ads.

Incidentally, the author mentions the problems with adding sound effects to anims, namely the large amount of memory this would take up. This is a good point, but when you're using three meg of memory for the graphics, another 100-200K wouldn't really be a problem for sound. Anyway, that's just a thought.

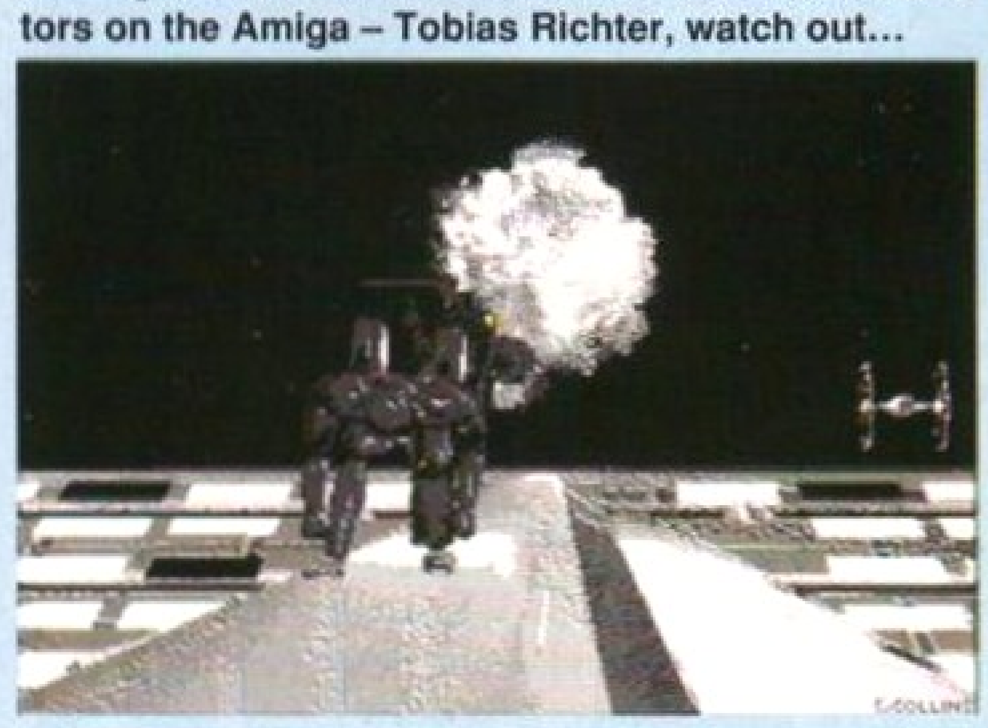
The Ad is an improvement over *Speed Limit* – much clearer rendering, although the brightness factor could do with being upped slightly – and a more easily understood storyline. Craig Collins is turning out to be one of the best technical animators on the Amiga – Tobias Richter, watch out...



Our man's busy at work welding part of the hull of a space station – when he sees a Real Kola ad...



...so he sets off to try and find some real refreshment. Here he spots some Kola Kops approaching...



...and in a white-knuckle ride through space, he has to duck and dive to avoid the laser fire.

DESERT DO-DOO

NBS, 13/A25

DEMO

Excellent! The recent surge of young talent in the world of Amiga animation continues with this work by Andrew Shephard. Although he's produced a couple of anims before, under the title Robotic Antics, this is the first piece of his work to be seen here at *Amiga Format*.

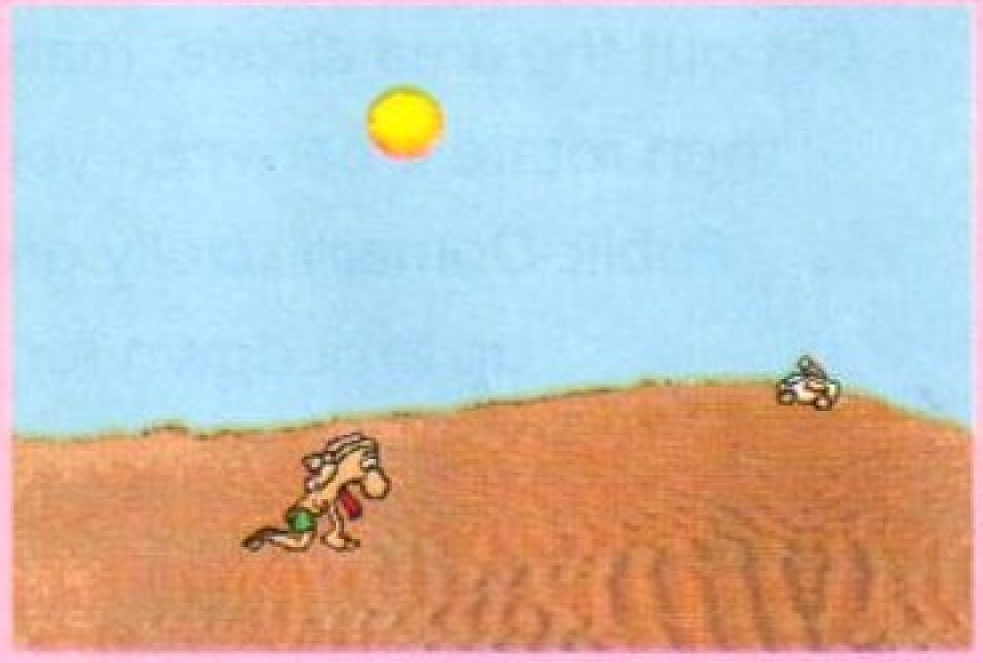
Do-Doo is a character who's stranded 'somewhere in the Sahara Desert', poor little lad. Wearing nothing but standard desertware – sandals, shorts and a towel on his head, he wanders the sandy planes looking for civilisation – eventually dropping to his knees from sheer exhaustion. The civilisation he discovers in this case is an ice-cream van (which are, apparently, quite common in the Sahara), containing a lot of ice cream and a busty young lady.

She asks Do-Doo what he would like in a nice (Schwartz-esque) voice, and he relies "99, please." This is a cue for the final scene of the anim, which is quite a surprise – and you'll have to get the demo to find out what it is. So what's so different about this animator that he warrants a mention in Demo Zone? He's just 12 years old, that's what. When you see this anim it's difficult to believe it was created by someone so young – nice one Andy.

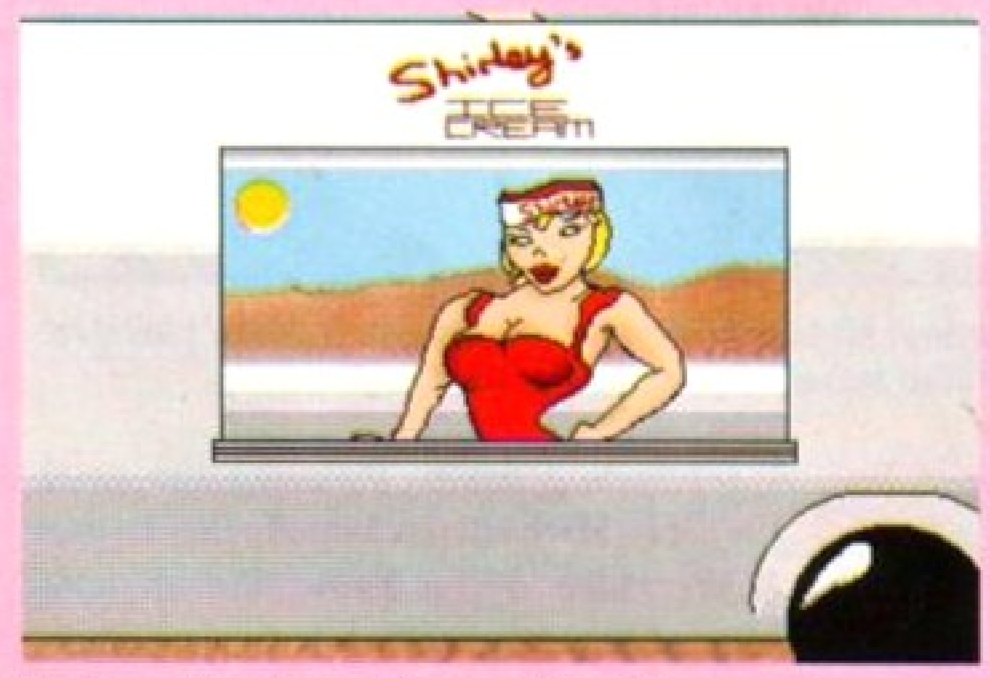
After Craig Collins, Roddy McMillan and Hugh Grove appearing in the past few months, yet another talented animator arrives on the scene. The future of Amiga animations just looks rosier and rosier, don't you agree?



Do-Doo merrily treks around the desert, taking in a bit of sun and generally enjoying the atmosphere...



By now he realises that holidays aren't all they're cracked up to be – terrible food and undrinkable water.



The lusty decadent delights of Mr Whippy await our hero, but in decidedly odd quantities.

Ah, back to the original megademo format of a nice set of wholesome Amiga tunes from Razor 1911. Along with the music comes several scenes of animated graphics, including some excellent filled-polygon space scenes. A huge *Star Wars*-type walker strides about a parallax-scrolling landscape one minute and then you have a rather large ship flying around in deep space.

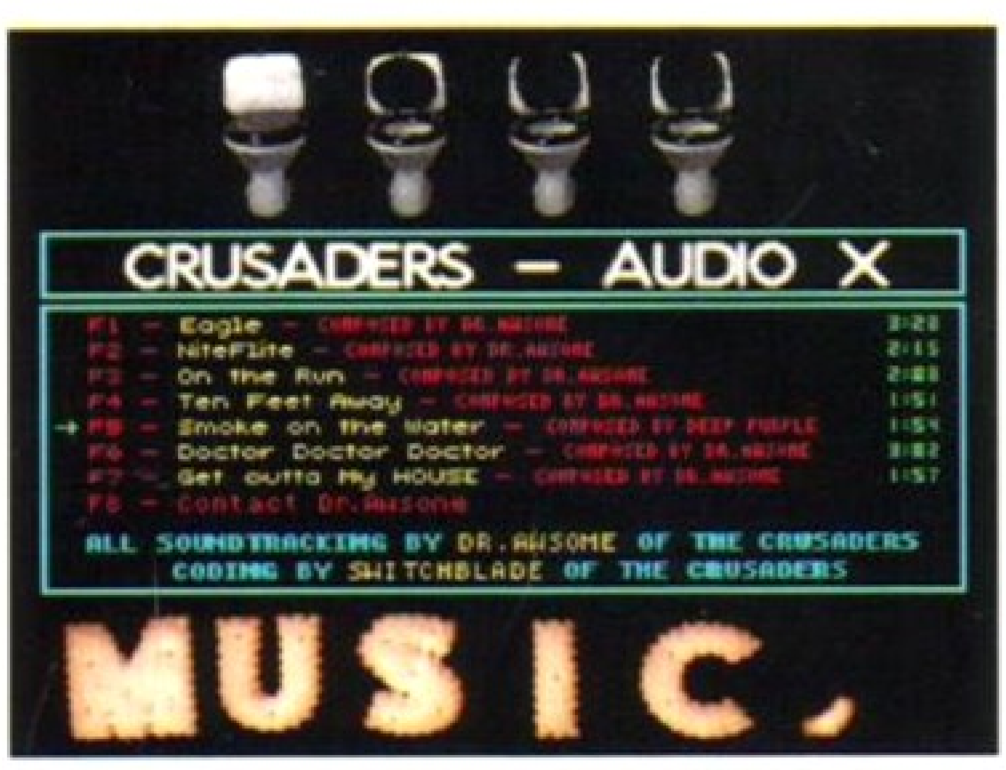
Another clever sequence is a spinning floor, on to which hundreds of shiny metal balls are dropped. They bounce around realistically for a while, before being sucked up in whirlwind-fashion. The presentation is superb, with particular attention paid to the way the characters are drawn.

A well put together demo, using some very clever routines. Worth getting.

AUDIO-X

CYNOSTIC PD, DISK S00002

DEMO



Bjorn A Lynne (aka Dr Awesome) prepares his stunning rendition of Handel's Toilet Water Music...

Bjorn A Lynne (of recent *hOBbiTs & SpACesHipS* CD and *Space Wars* video fame) wrote this collection of tunes, using internal Amiga IFF samples. Although it's not quite up to the standard of those two (they also used MIDI instruments), it is very nicely done. Not only is the music excellent, but the introduction screen is nothing short of brilliant.

The middle of the screen is taken up with the music titles – seven different tunes, including a bizarre version of *Smoke on the Water* by Deep Purple. At the top of the screen four toilets flap their lids in time with the music – one seat for each channel. A brilliantly surreal idea, very well done.

At the bottom the obligatory message scrolls past with greetings etc for other coders, but each letter of the font used looks like a shaped biscuit – very nice (no pun intended), Switchblade have done particularly well here, as have Crusaders.

THE SORCEROR

NBS, DISKS 13/A10,11,12 & 13

DEMO



The Sorcerer, having morphed from his original state, realises that being a dragon can have its good points...

A good four-disk animation courtesy of Anthony Carpendale, which shows the story of a sorcerer who's been turned into a dragon. The sorcerer is first shown standing near the edge of a valley, waving his staff in the air. The thunderstorm begins, and a lightning bolt strikes our man – this is where the fun begins.

Obviously some god or other upstairs has decided that the man should grow some scales, and he begins to transform into a dragon. This is achieved using a couple of reasonable morphing effects created using *Deluxe Paint IV*. The graphics are generally pretty good, although they do look a little bit on the scruffy side – they could do with a bit of tidying up, but this is only a minor point.

A big problem with this anim is that each scene is loaded separately from disk, and this spoils the continuity of the story. Although the swap disk screens are imaginative, the program should really look for the next disk in the second disk drive. As it is, the program recognises two drives, but only after clicking the mouse button. Maybe it's time that animators provided the facility to easily install their anims on to hard drives – after all, many serious users own them.

TOP TEN DEMOS OF THE MONTH

Just so that you know what's up and what's down we get a Public Domain library to give us what their top-selling disks of the month are...

NBS

1	Analog:Falling Up	D779
2	Piece of Mind	D789
3	Odyssey	PD130-134
4	Linus	PD166
5	RSI:Time Zone	PD177-178
6	Digital:Chameleon	PD176
7	Dolphin Dreams	PA101
8	Sonic the Hedgehog (Not Plus)	13/D6
9	Alcatraz:Museum	PS107
10	Jesus on E's	13/D9-10

WHERE TO GET THE DISKS IN THIS ISSUE

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DELTRAX: 36 Bodelwyddan Avenue, Old Colwyn, Clwyd, LL29 9NP. 0492 515 981

CRAIG COLLINS: 25 Jubilee Avenue, Normanton, West Yorks, WF6 1DW.

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10 Great Games Comp



Xenon 2, *Pro Tennis Tour*, *Ferrari Formula One*, *Nighthunter*, *Rick Dangerous*, *Super Ski*, *Pick 'n' Pile*, *Carrier Command*, *Chicago* and *Satan* all in one massive pack! (Doesn't work on A500 Plus or A600).

Description	Price	Order Code
10 Great Games	£24.99	AFGGComp

Two Great Games



A fantastic package with Imageworks' *First Samurai* arcade adventure doubling up with another *Format Gold*-winning game: *Mega-lo-Mania*, the Godlike strategy game from Sensible Software.

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Two for one	£24.99	AFMegSam

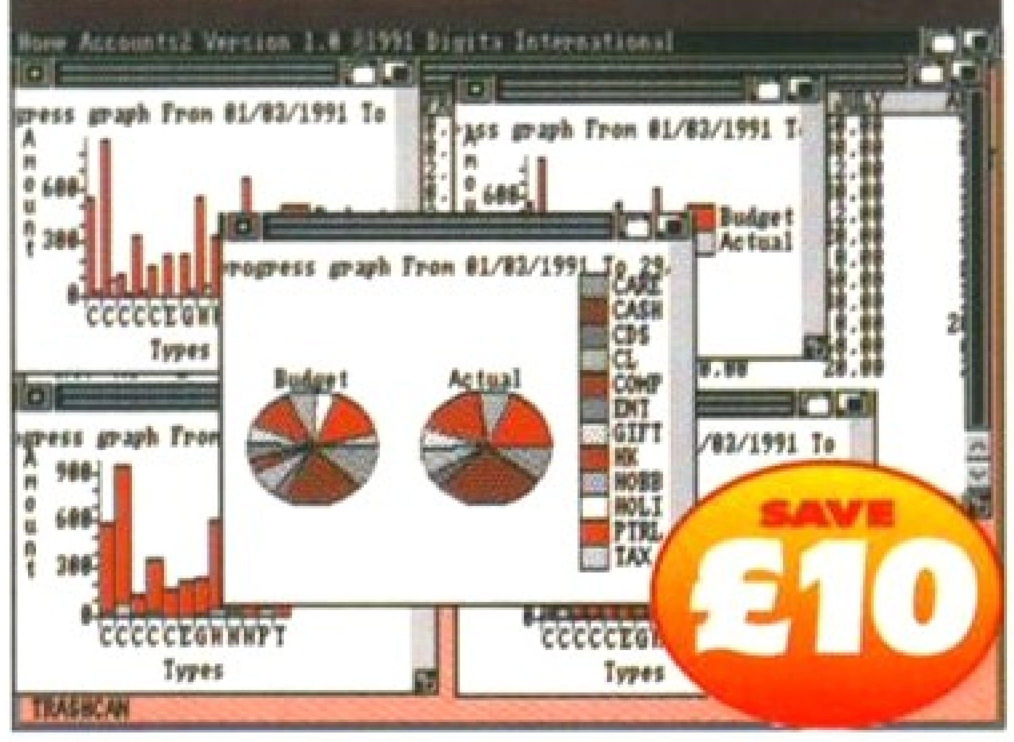
Fun School 4



Let the kids and the Amiga make friends, with Europress' acclaimed education software!

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Teddy Disk	£17.99	AM231
Frog Disk	£17.99	AM232
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Described by ***Amiga Format*** as 'a package which will suit any household', this is the ideal way to keep track of your financial affairs, from what's in your cheque account to how much is left after the bills!

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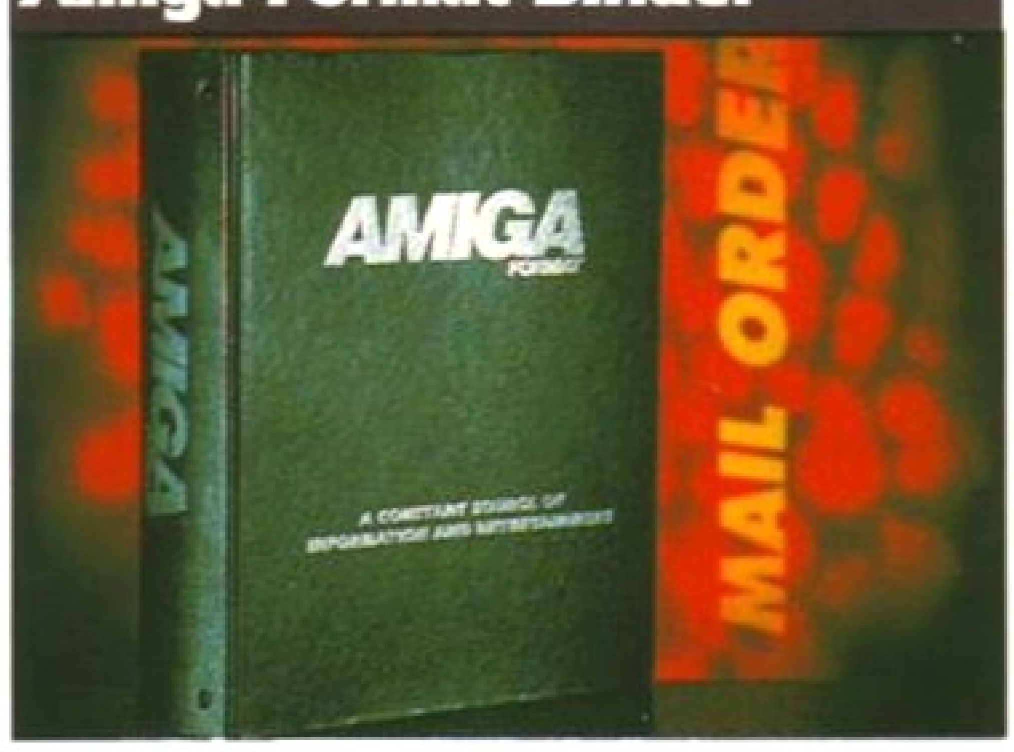
RAM Expansion



It's well over a year since new Amigas were sold with less than 1Mb of memory. Nowadays many games as well as most serious software, require that magic meg. Here's a bargain way to upgrade your A500.

Description	Price	Order Code
512K RAM Expansion	£25.99	AM237

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New Technosound Turbo



Newly updated sampler from New Dimensions enables you to grab digitised sounds, then sequence them into simple compositions. It contains a new cartridge, updated manual *and a* set of audio leads.

Description	Price	Order Code
Technosound Turbo	£29.95	AF246

The Amiga Format star buys

AF Amiga Accessories



If your bedroom, lounge, study or wherever is anything like the *AF* offices, you'll be needing a dust cover for your Amiga. So we've had these super ones designed in a nice grey colour that's just bound to be all the rage in 1993. And knowing that co-ordination is the key to style, we've created matching mouse mats and disk wallets as well. The covers and wallet are resilient and water resistant (small Coke spillages, not computing in the bath). The mouse mat is well... sort of flat and grey actually, but in a truly fabtastic fashion. Get them now, or get them later.

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Video Master

SAVE £7



Get your very own mini multi-media workstation with MicroDeal's new combined audio and video digitiser.

This product, rated at 85 per cent in this very issue of *Amiga Format*, allows you to capture both sounds and pictures for manipulation on your A500 or A500 Plus.

And once you have your sounds, the software includes a powerful video and audio sequencer, allowing you to make your very own multimedia movies.

Description	Price	Order Code
VideoMaster	**£64.95**	**AMF245**

StereoMaster and free Quartet software

This update of Microdeal's *MasterSound* is an ideal entry level sound sampler. Its numerous features and improved easy-to-use graphic interface make it an excellent bargain for all you budding Amiga musicians.

And as an extra special offer we are throwing in for free the excellent *Quartet* sample MIDI sequencer. This powerful, but easy to use, four track sequencer will enable you to build your sampled sounds into full music tracks. At this price, you can't afford to miss it.



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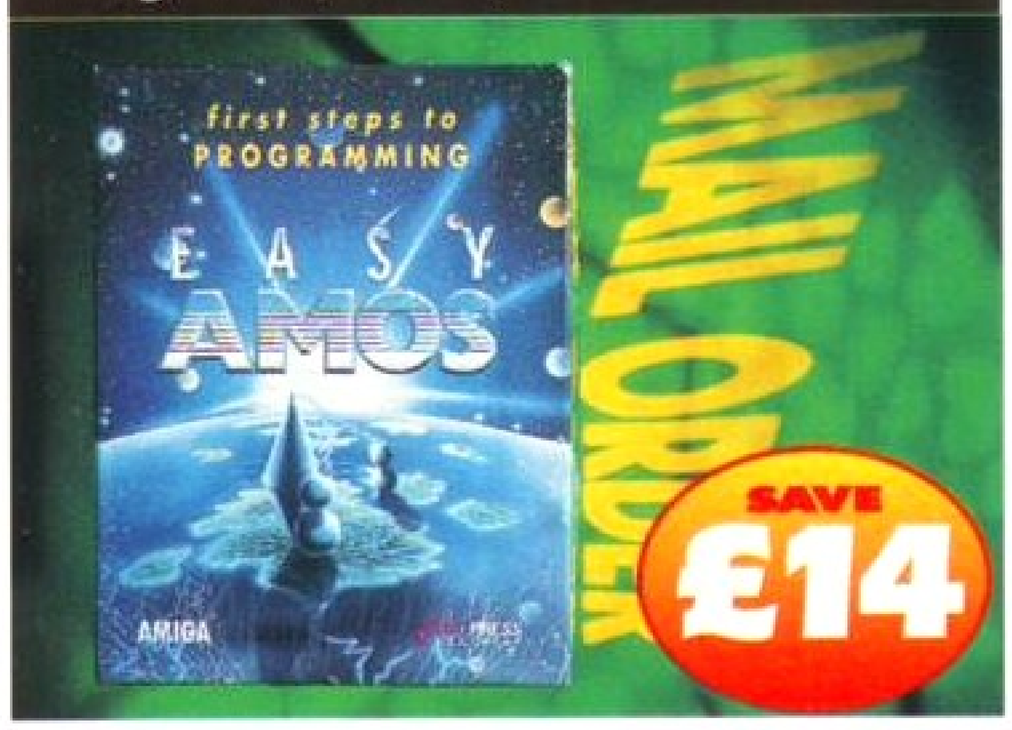
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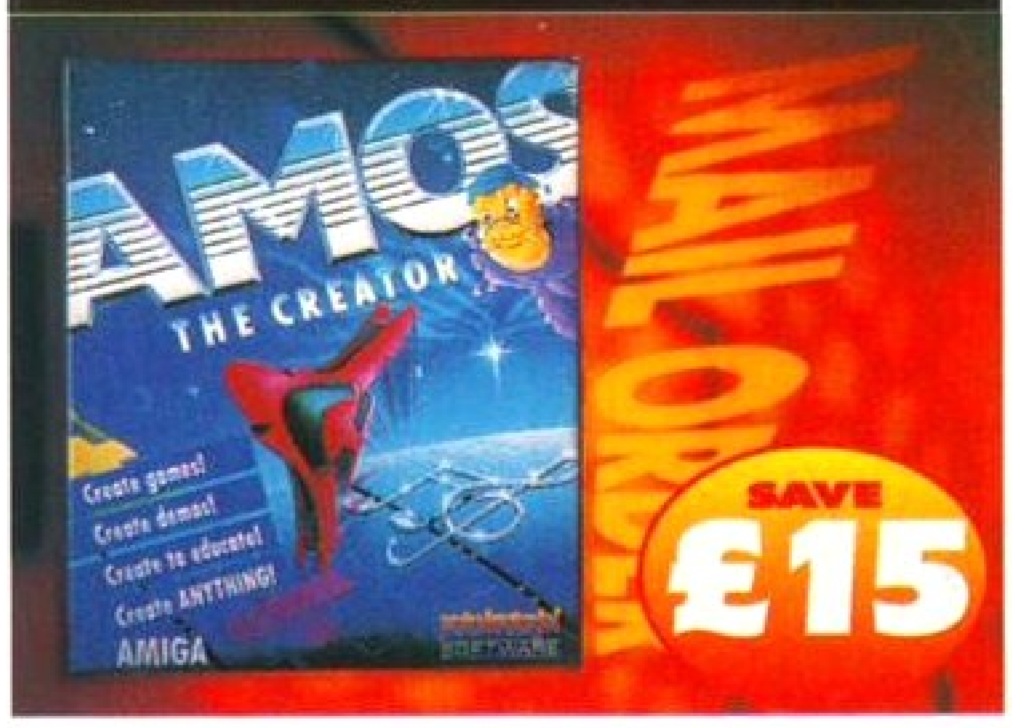
Easy AMOS



Designed for the beginner who wants to learn programming but doesn't know where to start, *Easy AMOS* is more than a programming language. Based on the successful *AMOS*, it has many helpful examples and detailed explanations to help you learn.

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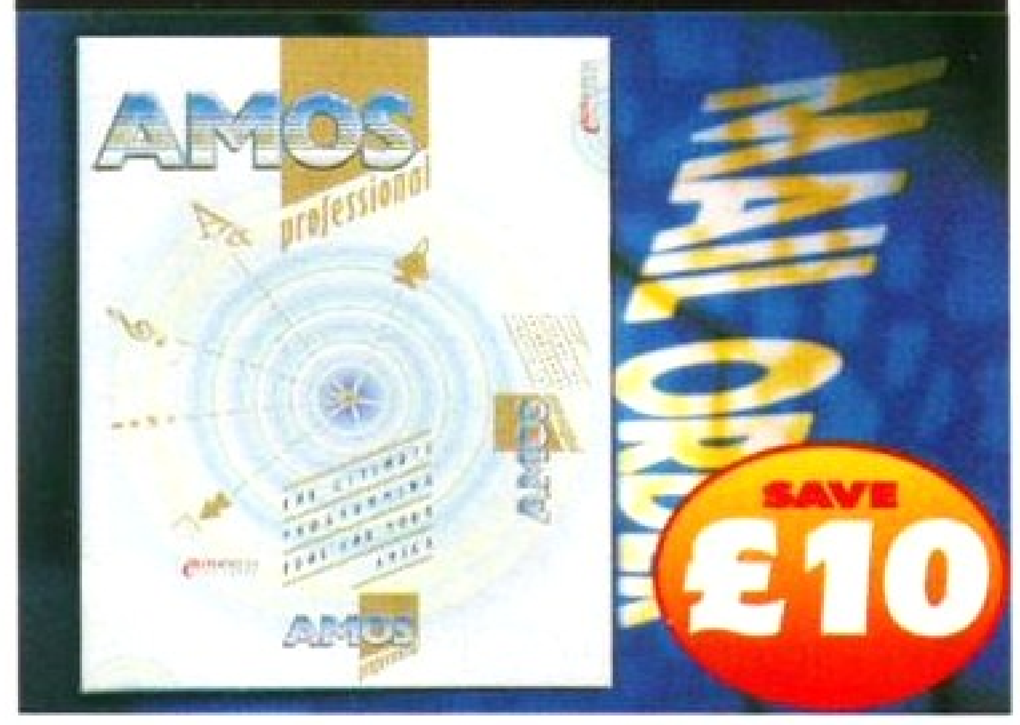
AMOS Compiler & AMOS 3D



If you want to get the most out of *AMOS*, why not pick up both the most popular *AMOS* extensions in one pack? The *Compiler* translates your *AMOS* creations into stand-alone 100 per cent machine code, while *AMOS 3D* lets you create amazing 3D worlds!

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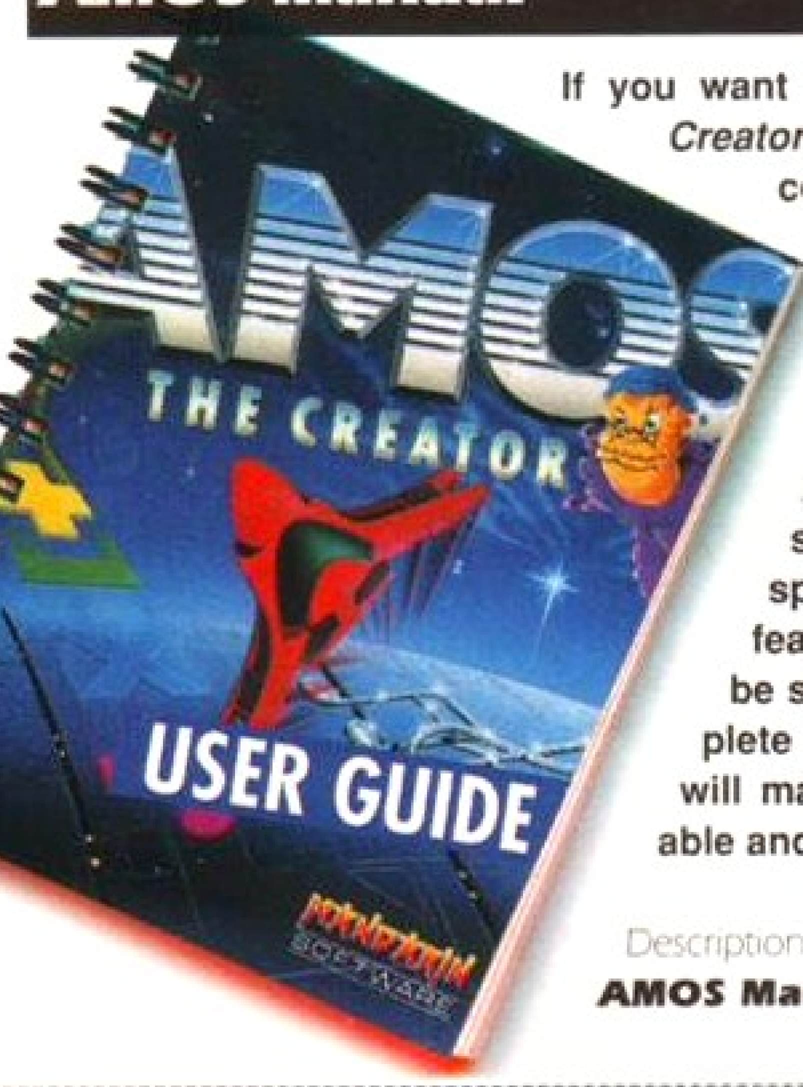
AMOS Professional



This is the highest-rated package ever reviewed in ***Amiga Format***. Top of the *AMOS* range It updates the famous *AMOS* extended basic programming language with new commands and facilities that make it a real winner! (Needs 1Mb minimum)

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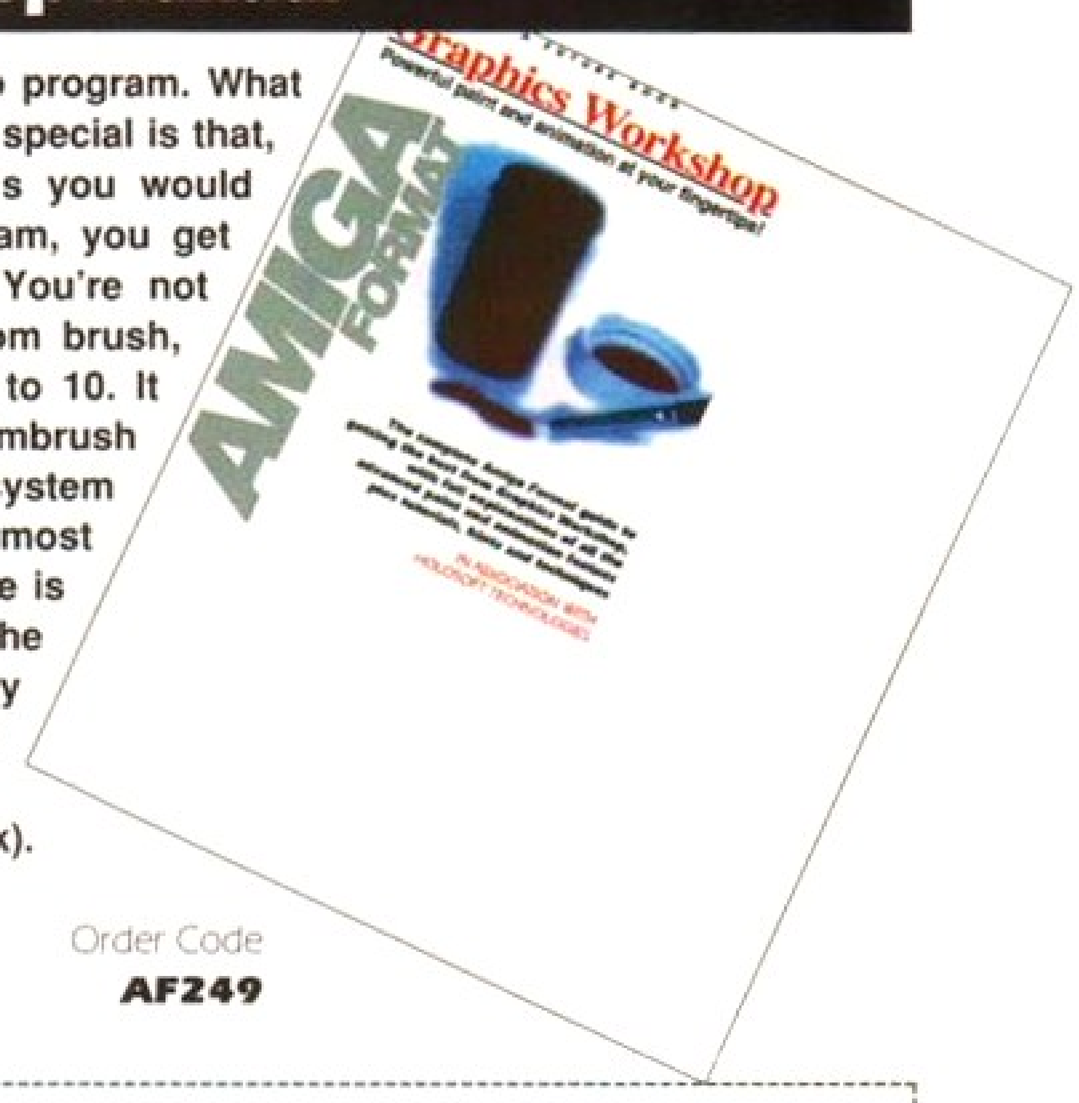
AMOS Manual



If you want to make the most out of *AMOS The Creator*, this is exactly what you need. It's the complete manual, as supplied with the package, and it also includes an Extras disk that contains all the example programs and extra bits and bobs that we couldn't fit on the Coverdisks this month. We'll continue to give lots of tutorials and advice, and showing you techniques for creating specific kinds of programs, as a regular feature in *Amiga Format*, so you wouldn't be stuck without this book: but as the complete reference work, you'll find The Manual will make your *AMOS* career far more enjoyable and creative!

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AMOS Manual	**£13.95**	**AF249**

Graphics Workshop Manual



Graphics Workshop is a superb program. What makes this drawing package so special is that, along with all the normal tools you would expect from a top paint program, you get some powerful extra utilities. You're not just limited to using one custom brush, you can pick up and store up to 10. It also features ANIM and Animbrush forms of animation, and a cell system which is quite probably the most powerful animation system there is for the Amiga. Why not get the most out of this top program by buying this expertly illustrated instruction book and tutorial guide (with a special tutorial disk).

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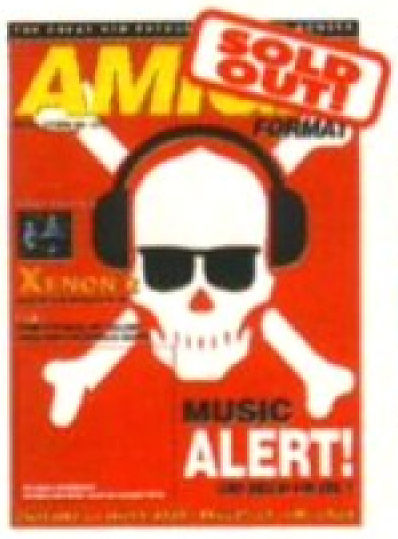
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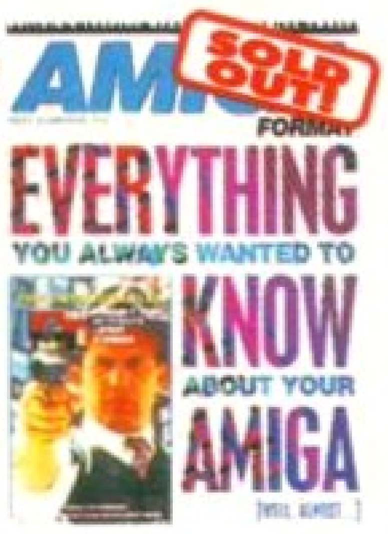
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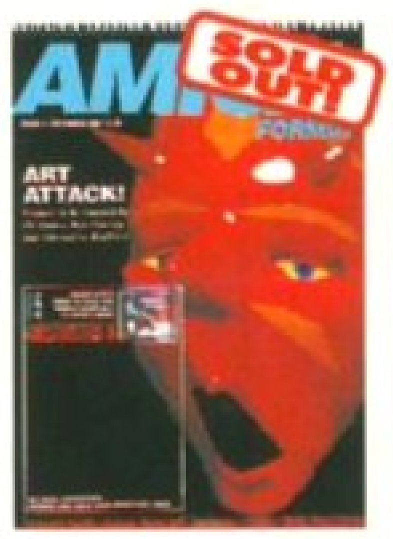
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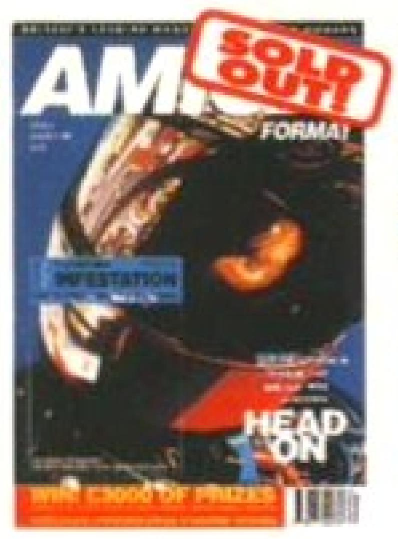
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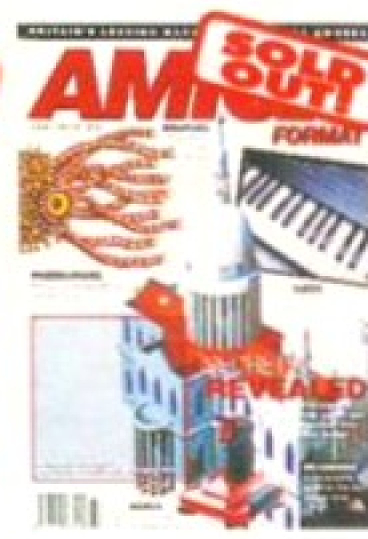
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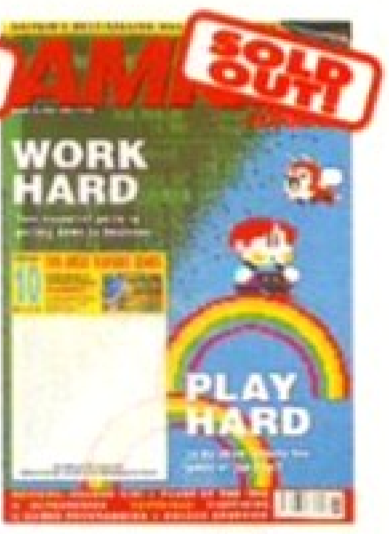
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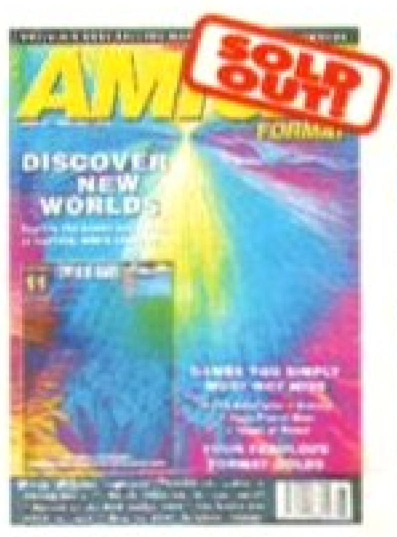
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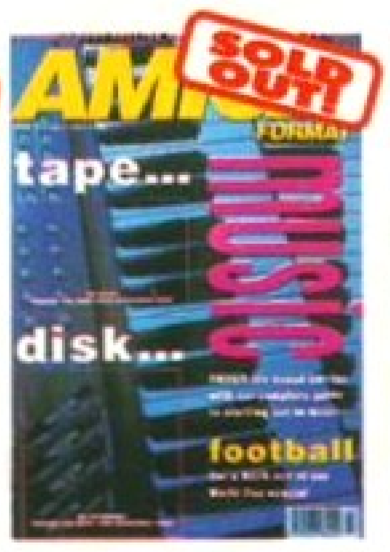
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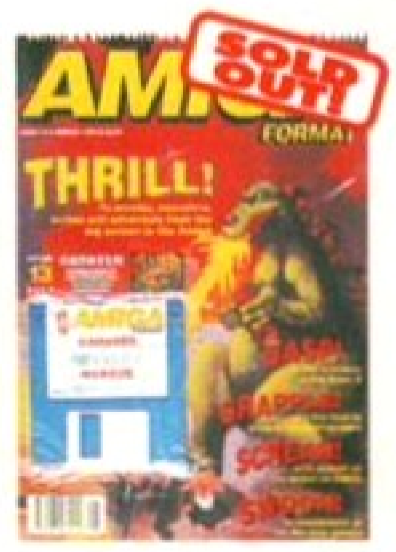
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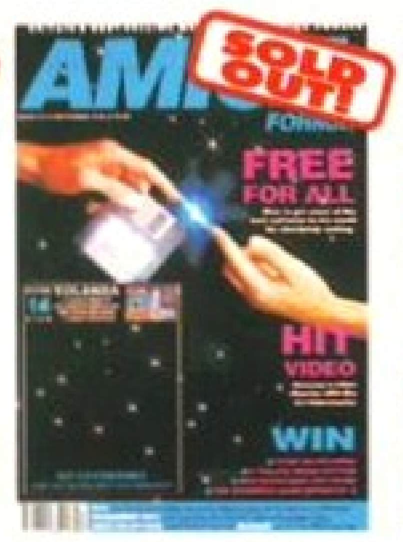
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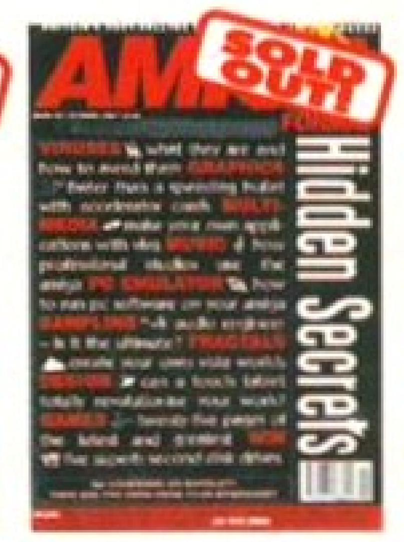
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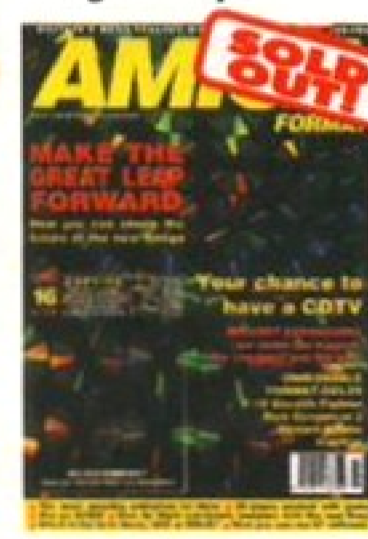
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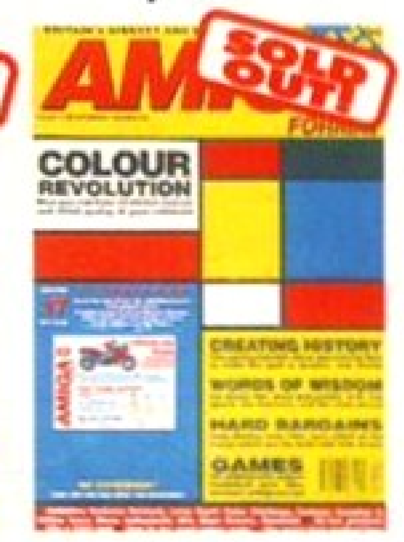
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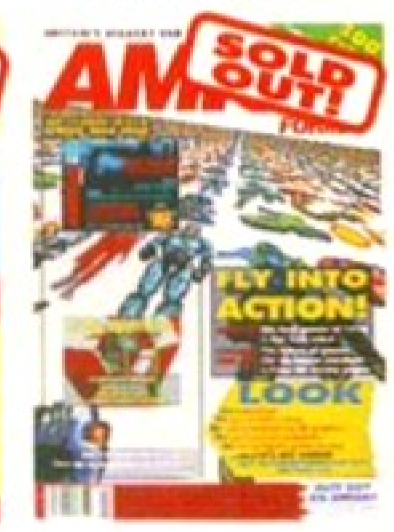
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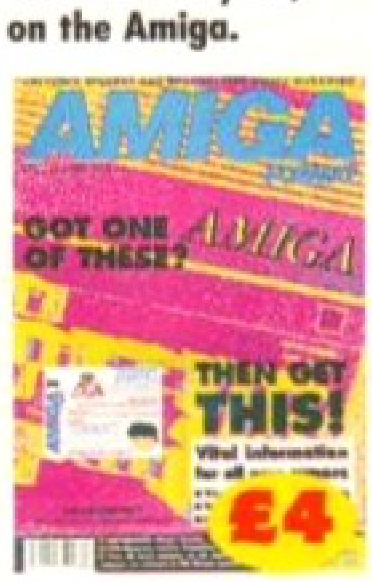
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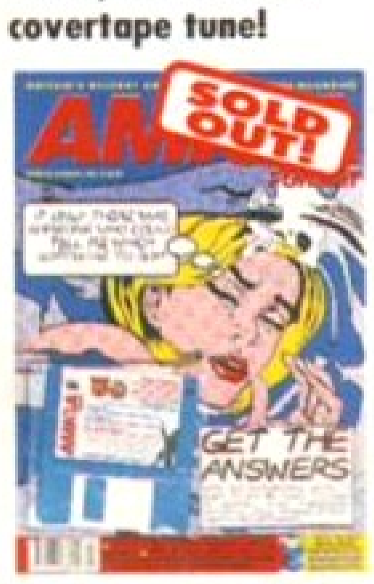
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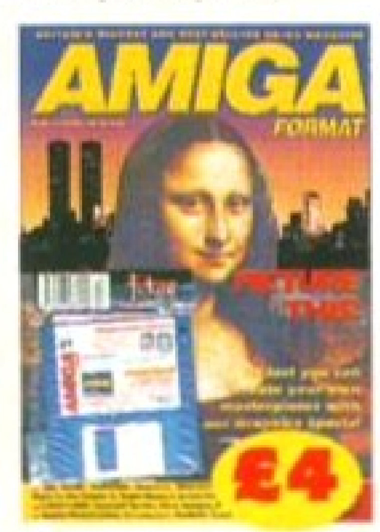
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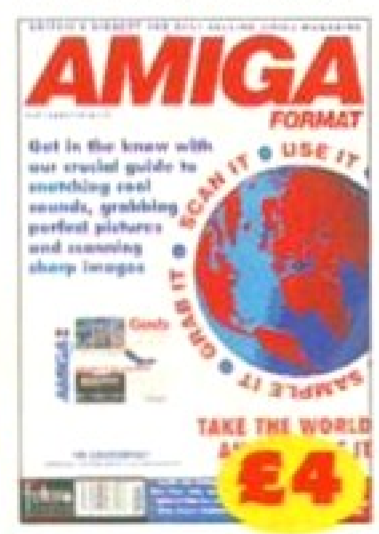
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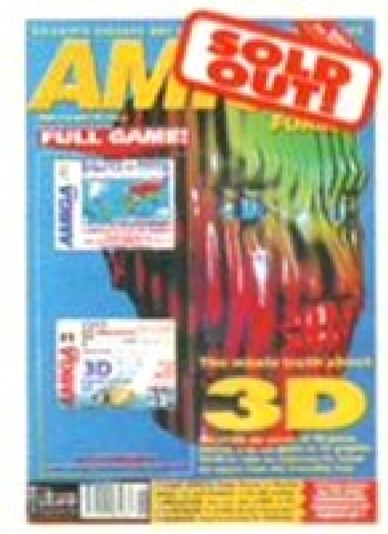
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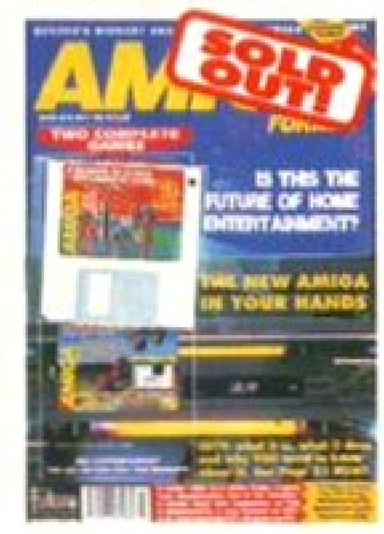
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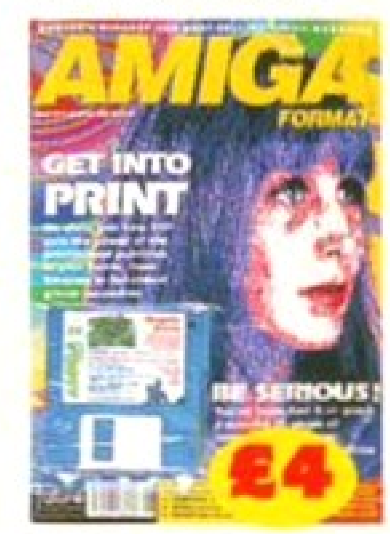
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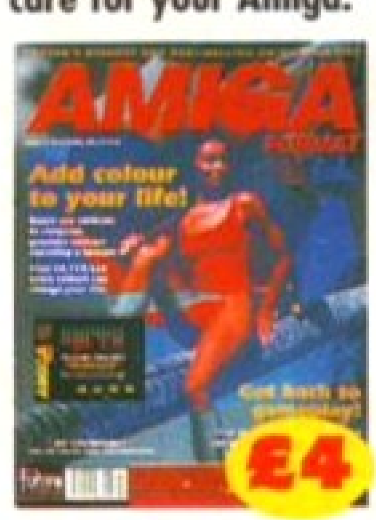
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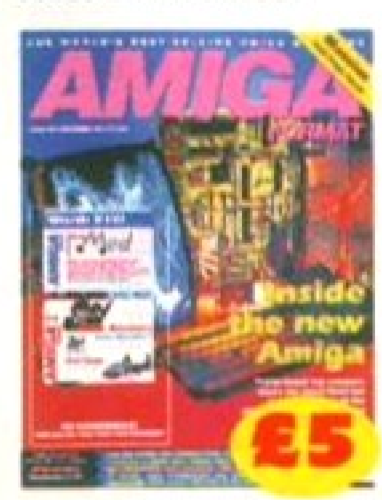
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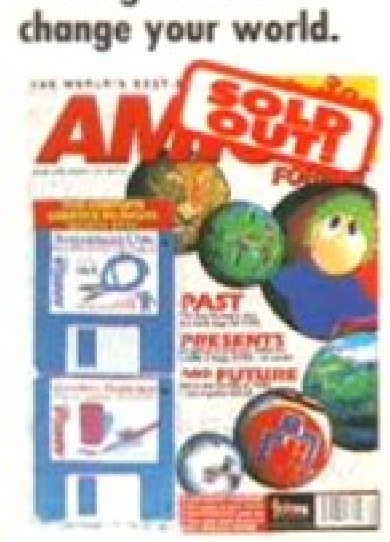
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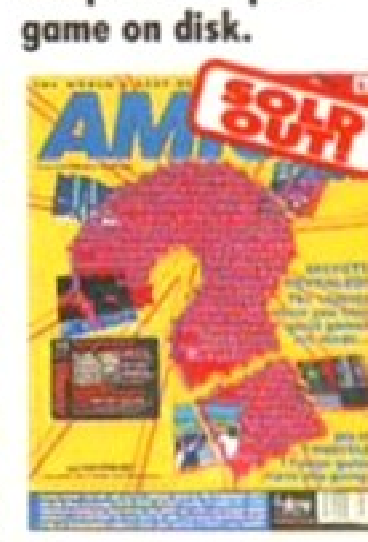
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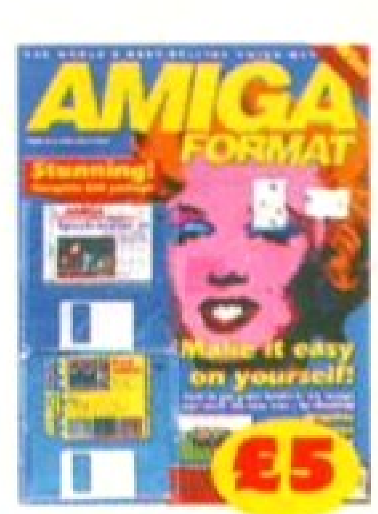
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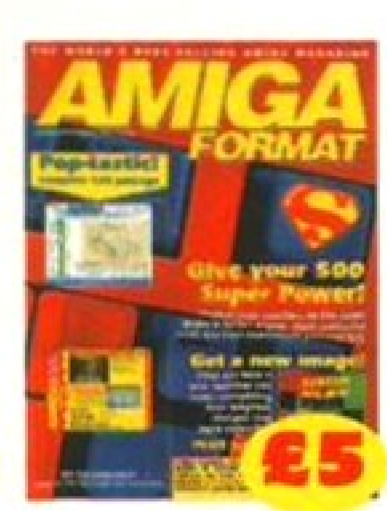
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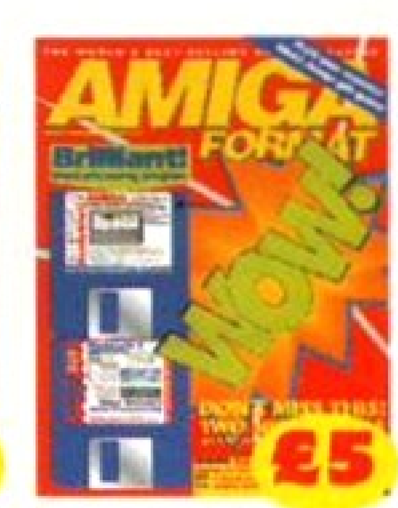
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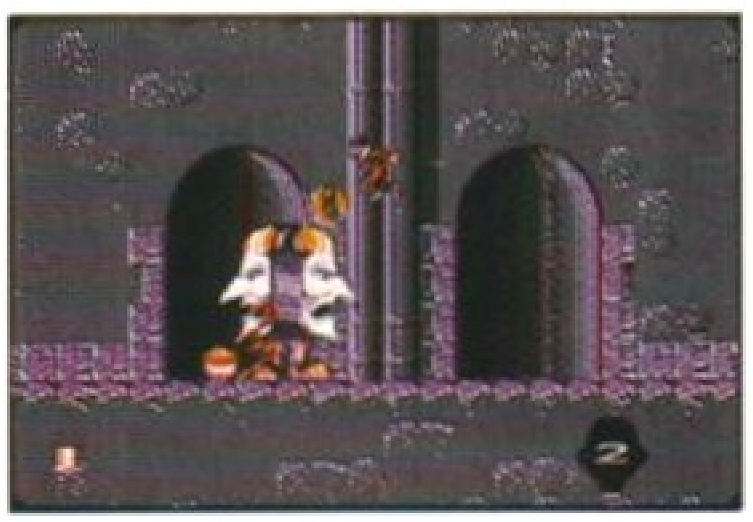
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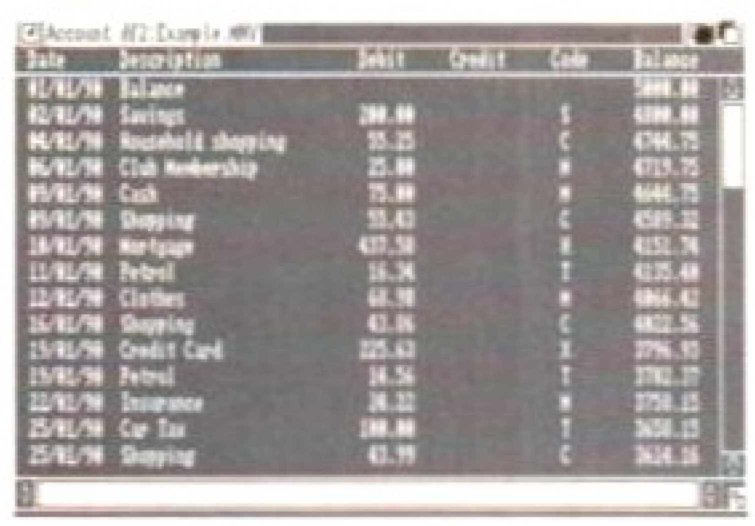
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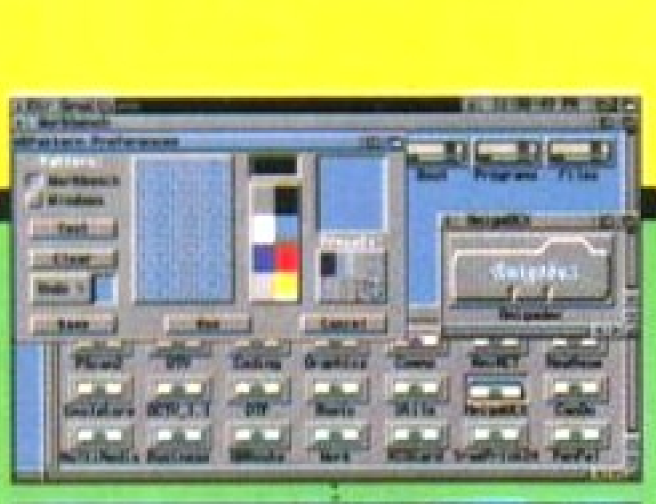
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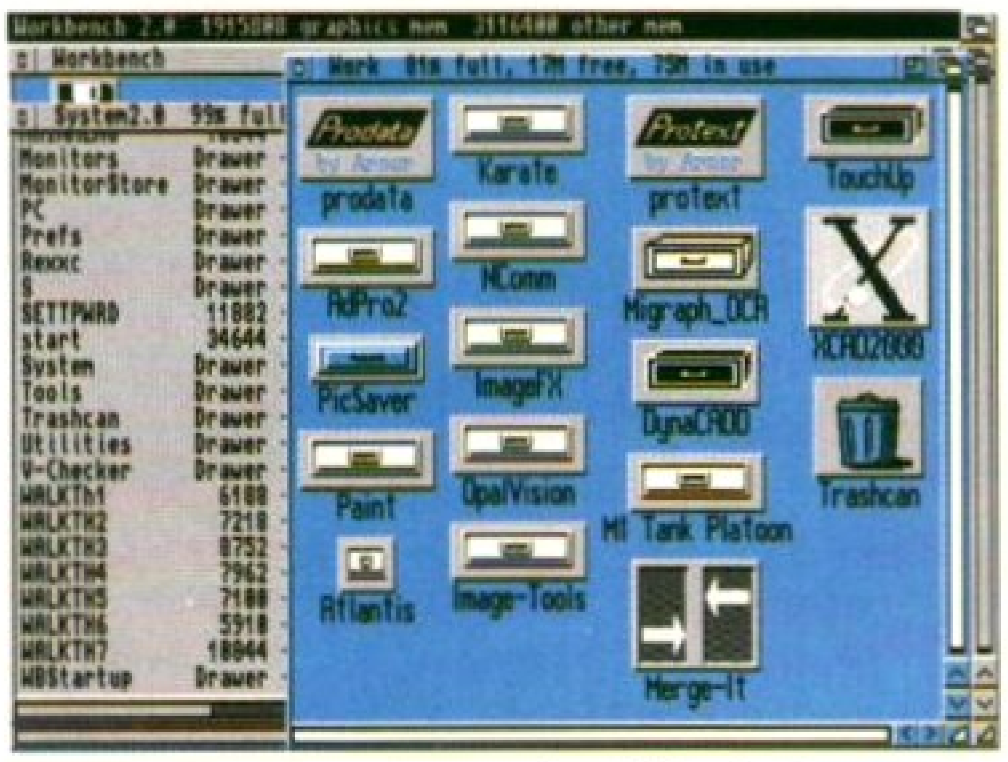
Workbench

This being written in the season of good cheer, **Pat McDonald** is where he should be – down the pub. Here are some conversations he overhead, all being Amiga-related problems and solutions.

JUST BOUGHT AN AMIGA?

FROM: THRASH, CLEVELAND

I have an A600 with a Zappo 1Mb memory upgrade and a Cumana external floppy disk drive. When I load up Workbench, it tells me that I have 1,855,328 Mb of graphics memory. By the time Workbench has finished loading, this figure drops to 1,731,728 Mb of free memory. When I click on the Workbench icon, it drops again to 1,715,504. I'm confused – just how much memory does the extra disk drive take?



Every time you do anything with Workbench, the memory meter at the top of the screen changes.

About 25-30K. Workbench 2 also takes a large slice out of RAM for its own purposes – try removing the expansion and then loading Workbench, and comparing the difference in memory. As for the amount of free memory going down when a directory window opens; the Amiga has to remember what was underneath the window, so it can be replaced when the window closes. This takes even more memory away, but leads to a small tip which can help conserve memory – always close redundant windows if you are running low on memory.

2) When I use a hunter/killer virus checker, it often tells me that the disk it is checking has a non-standard bootblock (especially my PD collection). Then, when I try doing a check for file viruses, I get the message "Not a DOS disk in device DFx" – that is, it doesn't matter which drive I put the disk in. That's the error message for *BootX*, for *Virus Checker* 6.15 it's more like 'Error locking file Not a valid DOS disk'. What's going on?

Starting at the top – although bootblocks are always the same size, they differ greatly in their content. Many programmers like to design their own disk formats, which either load quicker or can store more than the standard AmigaDOS format. In order for such systems to work, the bootblock has to tell the Amiga where the next bit to load is, as well as displaying messages, putting up graphics and playing sound samples.

Non-standard bootblocks like these are common in two software categories: commercial arcade games and Public Domain demos. Such disks are not arranged like standard disks that you can look at with Workbench – that's the reason you get "Not a DOS disk", because it isn't! Such disks are immune to most file viruses (which can't make head nor tail of them) but are still susceptible to bootblock viruses.

You often get a message like "Error on block 880 – key set twice" when examining such disks through Workbench. The reason for this is that the first thing Workbench tries to do when you pop a disk in is have a look at a position halfway on the disk (the start of track 40, or block 880) and check to see if the disk is a standard Amiga type.

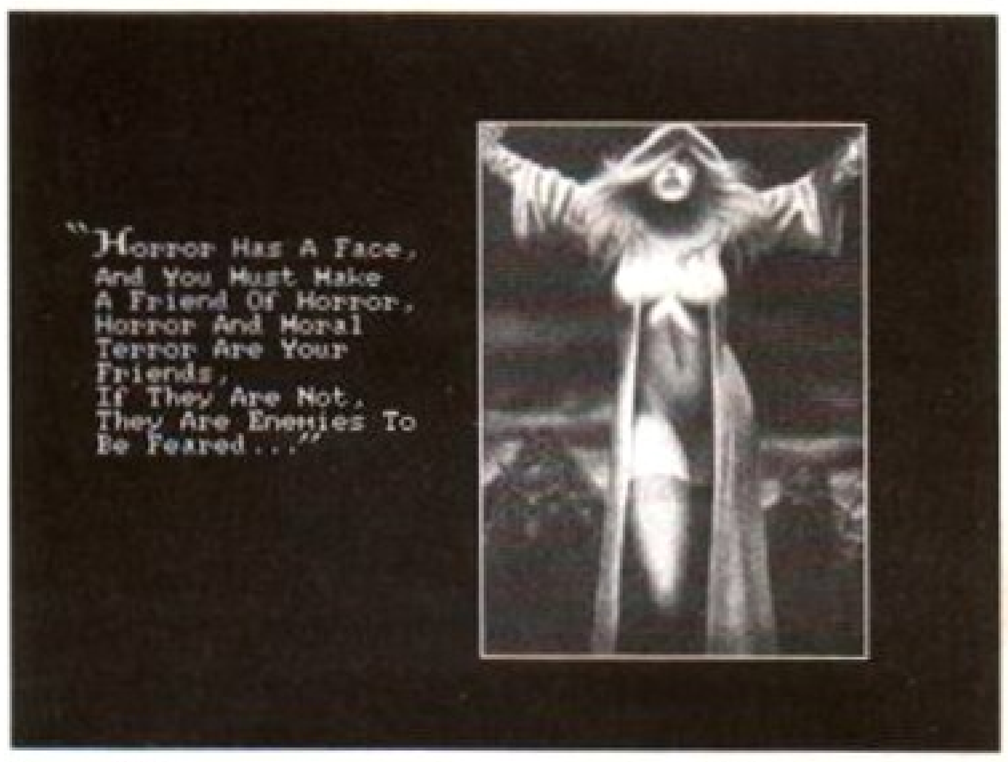
Now, these non-standard disks will, in 99 per cent of cases, fail to work with Workbench because standard Amiga disks have a lot of integrity codes written on them, and non-standard disks do not. What that means is that, if part of a disk goes bad (the little bits of magnetism get scrambled) then Workbench can attempt to detect where on the disk the problem happened, and how bad it is.

As for the different error messages, the way any program displays an error is up to the programmer. The two different messages are referring to the same problem, that is they can't look at any standard files on such disks, because the disks have been custom designed by somebody. Incidentally, game disks are usually not custom encoded for bigger screens or longer sounds – they're like that so it's more difficult to pirate them.

3) When checking the tracks of some disks I get the message "... has a checksum error on disk block 1693". Frequently I also get the message "DOS Error 9955". A particularly bad case was a disk I ordered from Diskcovery PD called *Microdeal Music Disk.* When I boot the disk, it works as far as the intro screen, but then hangs. Is it possible to repair this error?

It's almost certainly not a natural error. There are two explanations – either the disk has been damaged by a virus (unlikely as the errors are occurring in the same place – most viruses are more randomly destructive). Or it's a protection track, left unformatted so you can't copy the disk through Workbench. I regret piracy has removed a large part of the trust from the programmer/customer relationship.

4) When using *Virus Checker* 6.15, (which I have dragged into the WBStartup drawer on my Workbench disk) I cannot get the program to learn new bootblocks. I just get a message saying "Error sorry can't update brainfile". When I checked the *Cry for Dawn* PD disk (pictured below) I received the message, "Bootgirl data is protected from being read you will have to use 'Protect filename +r' if you want this file to be checked for viruses". I tried it, I just got "Unknown Command" messages.



Many PD programmers use non-standard disk systems, to squeeze even more graphics and sound on to their disks.

Continued overleaf

NICE ONE NORMAN

FROM: IAN BOOKER, HARROGATE

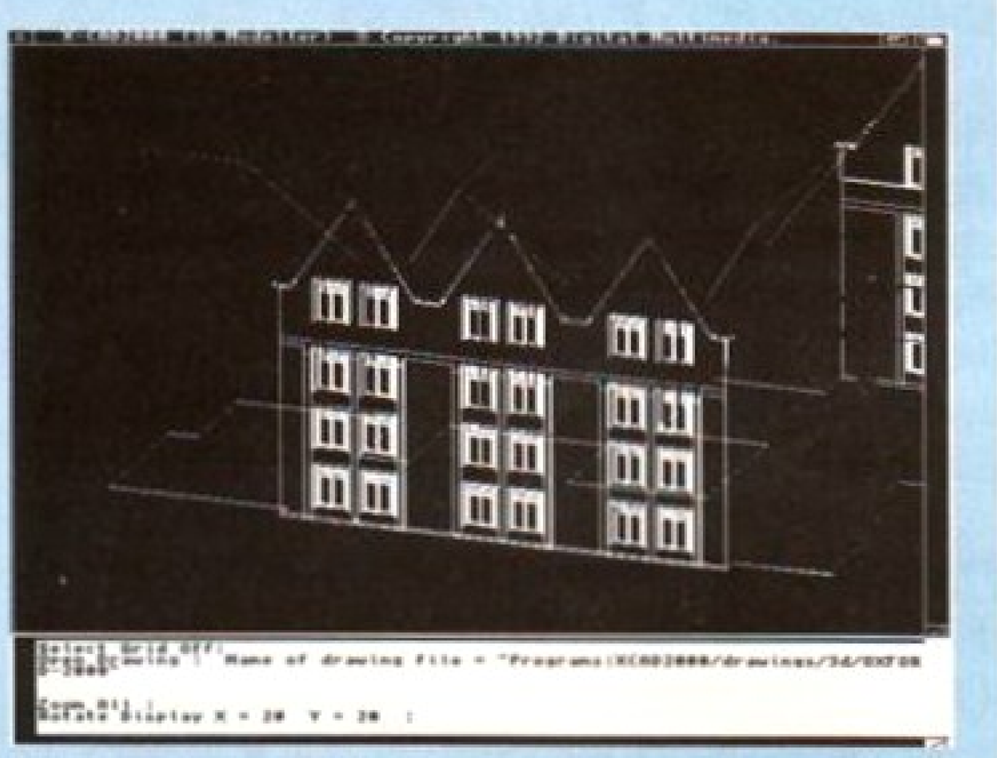
I am going to upgrade to an A1200, preferably with a maths coprocessor and a hard drive, so...

1) What can I reasonably expect to see in the way of expansions for it in a couple of months?

IDE hard drives, which will be getting more expensive because of the pound-to-dollar exchange rates: PCMCIA memory cards, which will stay about the same price (the price is going up because of the economic crisis, but coming down slowly as production gears up). PCMCIA hard drives will probably be available, but expensive. Several trap-door memory expansions should be on sale, and maybe an '030 card or two as well (these will take longer to get into production).

2) I am planning to run *XCAD* and *Imagine* on the new machine. I currently have a Philips CM8833 Mk 1 monitor, but what can I gain by getting an SVGA or multisync instead?

OK, remember, you asked about *XCAD*. If you want to edit at high resolution, the screen will flicker – some people can work with interlace, some can't. If you plug a multisync or SVGA (SVGA's are cheaper, but do test them first – some don't work on the Amiga) and set your Amiga Productivity mode on, then you can edit interlace screens in comfort on a rock steady display.



***XCAD 2000* is a design program, but a TV isn't suitable for using it – the higher resolution you use the better.**

If you know someone who has *Art Dept Pro 2* you could render your designs into 24-bit true colour IFF files, which could be converted to HAM8 'more colours than you can shake a stick at' mode or 256-colour mode with *Art Dept Pro 2.* You could view such pictures with Multiview. SuperHires images (1,280 width but not interlaced) could be done, though they don't display well on a standard A1200 in HAM8 mode (256 colour is fine). They worked fine on an A4000 though!

MINE'S A LARGE ONE

FROM: GEOFFREY STUTTAFORD, EPSOM

I decided to change my ageing A500 for an A1200. At the moment I have a CM8833 monitor, Star LC10 printer and a Cumana second drive attached to my new A1200.

My problems started when I attached a Rocgen Plus genlock to the machine. If I have my other equipment plugged in as well, then the machine will not even start up, simply displaying a software failure message. If I disconnect everything except the genlock, then I can get to the animated disk that appears when you turn the machine on, but cannot get any software to boot. Why does the machine go belly up as soon as I put a disk in the drive?

Genlocks perform a clever trick – they let you overlay Amiga graphics on to a video signal, which you can then record. However, in order for the precision synchronisation needed to happen, the Amiga has to be in a certain state of low usage. In addition to that, genlocks do horrible things to your Amiga power supply, like drain it dry.

With a cut-down machine, it all goes well until the drive spins, needing time on the buses (address and data) and taking quite a bit of power as it gets up to speed. Bang, your Amiga then falls over in horrific genlock accident.

I noticed that the power supply unit is marked A600 and is quite light in comparison to a friend's A500 power supply. Does the weight of a unit make any difference to the power supply capability? If I fitted a bigger power supply in the A1200, would that solve the problem? Or should I get a 12 Volt DC power supply for the Rocgen Plus?

I tried plugging a Rocgen Plus into an A2000 with a hard disk and memory, not too over the top considering the size of the power supply, yet that hulk couldn't power the genlock. Methinks the Rocgen is a bit greedy even for a genlock.



The Rocgen Plus is notorious for producing overbright displays and for hogging your power supply. Take note!

However, no trouble at all after I borrowed a power supply from a Sega GameGear recharger. Who said Segas were useless? Any 12V DC adaptor with the right connector will help – get a big meaty one.

Because you've got Workbench 2, this is a lot easier to sort out. In a nutshell, the programs can't find the files they need to run. If programs on Workbench standard disks work fine from floppy but do not work when you've dragged the icon to your hard disk, you will have to drag more files from the floppy into the relevant drawer on your hard disk. (Files in the floppy libs directory have to go to libs on the hard drive, devs to devs, and so on).

However, files on a disk without a relevant icon file (the same name with .info after it) do not show up on Workbench. The next thing about Workbench 2 is if you double-click on a disk icon, then select Show/All Files from the Window menu, every file is given an icon. So you can drag these invisible files on to your hard disk. Remember, you will have to do the same Show/All Files selection for your hard disk too.

Hard disk users with Workbench 1.3 – you have to use the Shell or upgrade.

5) As I said earlier, I've dragged the *Virus Checker* icon in the WBStartup and it runs automatically. Why doesn't this work with programs like *WizardClock* or *CrossDOS*?

Either because the program was written to be incompatible with the WBStartup drawer (rare but not unheard of) or again, some files are not available from the hard disk. When AmigaDOS boots up from a disk (hard or floppy), it expects all the fonts, libraries, device drivers (including printer drivers) and Preferences settings to be on the disk it booted from.

6) I'd just like to congratulate 17-Bit Software on their incredibly speedy PD mail-order service. See, it's not all whinging!

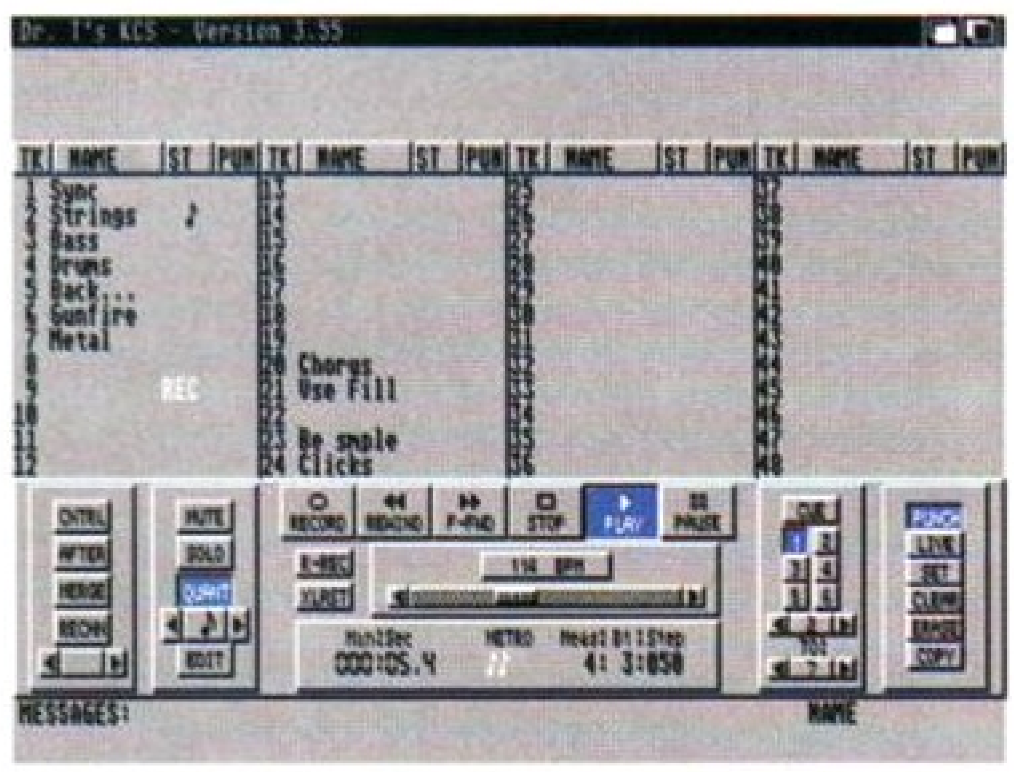
Good. But they're not the only ones.

BOOK A GIG?

FROM: RUDESH AMBASNA, MITCHAM

I currently own an A2000 and I use it mainly for constructing music. I use *MED* for the actual music arranging, and *Audio Engineer* for sampling. I have 3Mb of RAM.

1) I tend to use long samples rather than short instruments. Apart from *OctaMED*, is there a better music construction program better than *MED* for this sort of work?



Dr T's *KCS* is currently the best MIDI sequencing package available – maybe *Music-X 2* is better, maybe not.

Yes. Dr T's *KCS Level 3.5* is the acknowledged, best music package available on the Amiga (I understand *Music-X 2* is currently being worked on for release later in 1993). The original *Music-X* is best steered clear of if you haven't got a MIDI interface and at least one MIDI instrument. *KCS Level II* needs extra hardware too to be really good.

2) *MED* will not play a sample longer than about 131K. Is there a way around this?

No. At least, I've not heard of one. Apart from reducing your sample rates, to have longer samples (danger, quality loss, I hear you shriek) in the same space.

3) I can only load about 880K of samples into *MED* before it displays an "Out of Memory" message. If I then save the data as a module, the total length of the module is less than 1Mb (again, about 880K), Furthermore, I can copy this module to the RAM disk three times. Why can't I use all 3Mb of memory to load in samples?

This is because you have only got 1Mb of chip RAM for storing samples. Bearing in mind that some chip RAM is usually needed by the program (this is for things like the graphics, disk drives etc) then you are running out of chip RAM. You could try fitting a 2Mb chip RAM expansion into your A2000 – the only one that I've actually seen working (*Wings* doesn't work on it) is the DKB MegaChip 2000, which is available from 16 Bit Centre (0423 531822) as well as many other suppliers.

4) And finally can you give me some basic information about MIDI?

It's a way of wiring a plug, and then a fairly simple system for sending and receiving information. There are three common types of socket, namely MIDI In (for listening), Out (for talking) and MIDI Thru (directly repeating what's coming in without change). They are usually found on the backs of musical instruments and equipment (like professional-quality samplers). The Amiga has none of these as standard (except the CDTV – no MIDI Thru) but a £25 interface plugged into your serial port gives all three.

You can then run MIDI software on the Amiga, to control and sequence MIDI instruments and equipment. Oh yeah, MIDI stands for Musical Instruments Digital Interface. Or was it Idiots? Anyway, have a look at the advert for *Future Music* – that's where old Maff Evans went to.

ERE, YOU KNOW YOU SOLD ME...

FROM: LGP FARMER, NORTHHUMBERLAND

Two weeks ago I purchased an A1200 which works very well on its own. However, there is a problem. It does not like either of my external drives. These are both PC880s and both are fine on the A500.

The trouble seems to arise when reading from the disk in the external drive. Quite randomly it will start claiming that there is a "Read error on block ???", but it's never the same block each time. If I click on 'Cancel' then the machine carries on as normal. It doesn't happen that often but when it does it is very annoying.

Occasionally, the machine reports a disk as NDOS (not DOS) and refuses to load data from it. If I take out the disk and put it in again then the disk works fine!

I reported this problem to Wang, who dutifully brought around another A1200, with exactly the same results. It would seem that there are some problems between the A1200 and Power Computing's PC880. Has anyone else had the same problem? Is it curable? There are no problems at all when I use the internal drive.

I haven't heard of anyone having the same problem, and as the Power PC880B was returned several months ago I have no means to test it myself. However, the fact that both your drives don't work gives credence to



The Power PC880B, apparently not compatible with the A1200. A shame, because it's good on other machines.

the impression that it doesn't work. It's probably a similar problem to the Roclite drive from Roctec not working with Workbench 2, that is it probably goes a bit too fast.

THERE'S THIS ESSEX MAN...

FROM: JOHN ROMBAUT, ESSEX

The problem that I seem to be having is when I get a screen indicator such as "Error while opening 203" or "Error 880". It's totally useless to me when presented as such because it gives no real indication as to what precisely is the fault.

As there does not seem to be any available publication explaining the numbers I have gradually been compiling my own index, but nowhere can I find explanations for error numbers 34, 66, 103, 106-119, 123-201, 215, 217 and 880. I also wonder whether there are any numbers used between 217 and 880. Can you help at all?

Sorry, no evil intent, it's just a writer's trick to tie all the loose ends up. I apologise. Errors on disk block 880 are explained above in 'Just Bought an Amiga?'. I assume that the others are happening when you are using the Shell or CLI – if they are happening to you on Workbench, then only Shell can give you a clue as to what is going on. I don't know what version of Workbench you are using, so if you haven't got 1.3 or later, my advice to you is to UPGRADE.

I'll assume, like I said, that you are a new Shell user. There is a handy feature to get a little explanation up, which can at least give you a bit of a clue as to precisely what you are doing wrong. I get errors like these every day. When you have got an error just type this and hit Return:

```
Why
```

Easy when you know how. Now, I can't tell you what all the errors mean, but here are the common ones. 103 is simply your computer is running out of memory. It happens on small Amigas, and it happens on big Amigas. You are always limited if you're trying to use more memory than you have got.

121 is also very common. It's when you try to use a data file as a program – like just typing the name of a picture you have saved with *Deluxe Paint*, for example. In this example, you would have to type the name of a picture displaying program, like *Vilbm*, *Showpic* – get a couple of PD slideshows and they will usually have the program on them (hopefully with the documentation file, often just called Readme for obvious reasons). Remember, programs are executable by the computer, data files are not executable – the computer cannot understand data files.

205 means you were just plain wrong – you tried to access a file that doesn't exist. Typing error – we're all human. The easiest way to avoid problems with the Shell is to always give the full path to where you want to be (name of a disk, colon, directories/subdirectories/nameoffile. Like this:

```
MyDisk:MyDir/MyLowerDir/MyProgram
```

Upper or lower case (capitals or little letters) very rarely make a difference with Shell. Learn from your mistakes and keep trying.

SPILT TRASHCAN



I was minding my own business when this trashcan icon gets spilt all over my screen. Disgraceful!

FROM: IAN TROTMAN, SOUTH WIRRAL

I am new to the Amiga, having just bought an A600HD. While I was copying files on the hard disk, I somehow managed to create the icon 'Copy of Trashcan'. I have tried everything short of reformatting the hard disk to erase this without success. How do I do it?

Assuming that the errant file is on your boot partition of the hard disk, then type this into a Shell. Notice the double quotation marks, which you have to use if the name of a file contains a space:

```
Delete "Sys:Copy Of Trashcan"
```

If the file is in a lower directory (Sys is just Amiga shorthand for the disk the Amiga has booted from – usually Workbench) then put the name of the directory followed by a slash. If the file is an icon file (followed by .info) then don't forget to add that:

```
Delete "Sys:MyDir/Copy Of Trashcan.info"
```

Oh yes. The file is probably protected from deletion, which is why you couldn't get rid of it. Type this:

```
Protect "Sys:MyDir/Copy of Trashcan.info" rwed
```

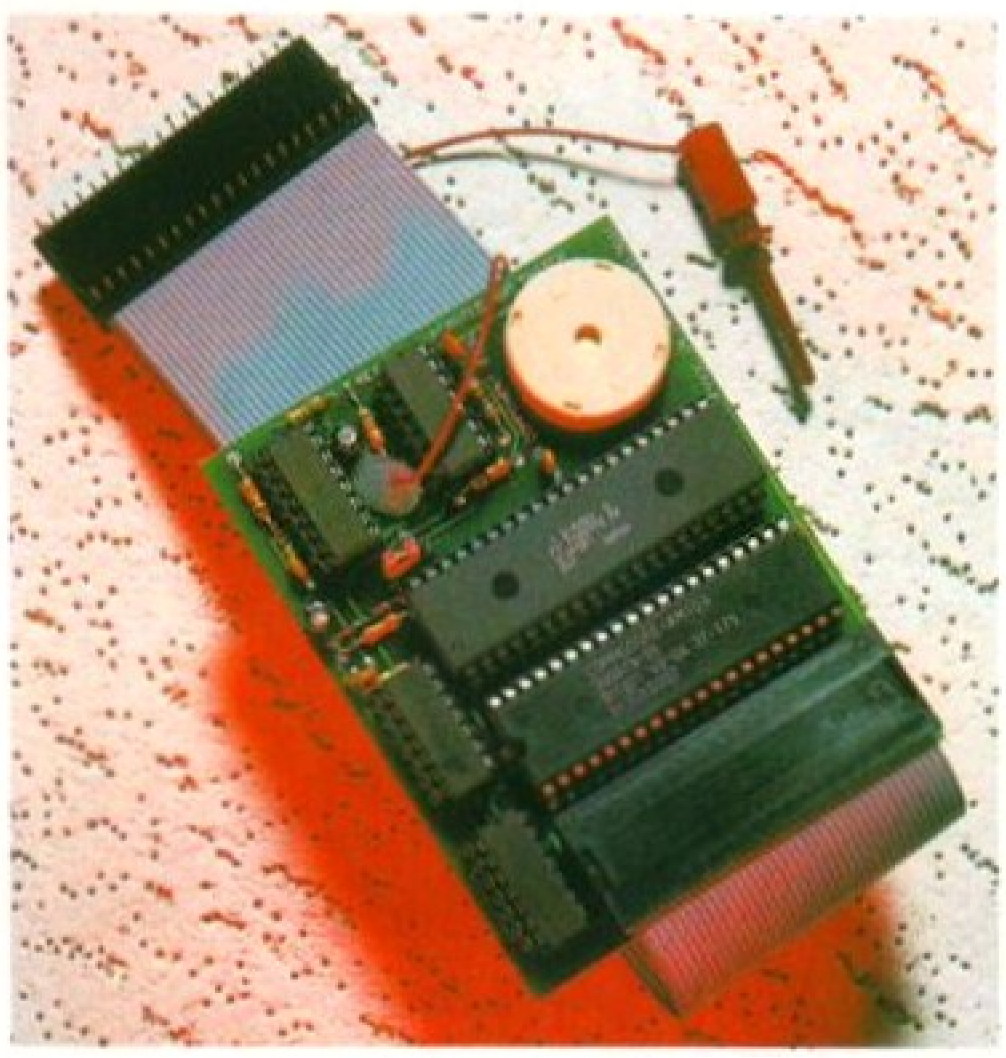
Only the d is necessary, the other bits are for readable, writeable and editable.

I WANT TO SEE MORE

FROM: MARTIN SMEE, CROYDON

I have a standard 1Mb A500 revision 5 with good old Kickstart 1.2 in it. I have owned the machine for six years now and have not yet found a piece of software that doesn't work with it. It's been great and has never failed, but now I feel a hankering to catch up a bit with the latest machines.

1) I want Kickstart 1.3 and 2.04, together with the 8372A Agnus to give me 1Mb of chip memory, but I'm not sure whether I can go that far or not. Is it possible and if so how?



ROM sharers were popular in the USA years before they caught on over here. Want a different Kickstart? Get one!

It is possible, as the revision 5 board can take the bigger Agnus and Kickstart chips. However, it is not easy for the inexperienced, and it is printed every so often in ***Amiga Format*** (Issues 18 and 32). I regret you can't buy one, they are all sold out. Time for a repeat performance? With A2000 bits in too? And a smashing great orangey bit in the middle? I would but this is a pretty

Continued overleaf

I DRIVE A FERRARI

FROM: PAUL ANDREWS, SITTINGBOURNE

If I was to purchase a hard drive for my 1Mb A500, add about 4Mb of RAM to it and install *Formula One Grand Prix* on it, would the actual game play improve? Would the graphics be smoother? Would an accelerator be a better idea? Or is it impossible to improve the speed of a game after the programmers have finished with it?

Hard disks just load and save faster, so when a game is loading and saving you spend less time not playing. An accelerator (Amiga with a faster processor, plus suitable faster RAM than found in your average A500, A500+, A600, A1500 or A2000) will indeed make certain games, notably simulations and including *F1GP*, update the screen faster, so giving a smoother moving view. However, not all games are faster, as they already go fast enough, so to speak.

Arcade games are usually clocked to a certain speed. Also, a lot of old arcade games (not all) use programming methods which make accelerators wave their little silicon legs in the air. Programmers are much more accelerator-aware than they have been – even so, there are still problems.It's not just a question of going to a bookshop and getting reference material off the shelf – 99% of bookshops will not stock up to date knowledge. Anyone with any recommendations, please drop me a line , because a lot of people want to know about the 68020 and other big processors.



Want to make your machine move like a Ferrari? Watch out – not all software will speed up...

small issue and the articles do need a lot of updating, we don't want people getting it wrong and ending up killing their Amigas, now do we?

2) I was going to trade in my A500 for a CDTV, but the offer ended too soon. Are similar offers available? Do people regularly offer trade-in deals?

Simple, you go to a shopkeeper and make him an offer. Or wait for him to make you an offer. I really am the wrong person to talk to. Get out there and hustle!

3) I'm stuck as to what to choose, an A570 CD-ROM drive or a GVP hard drive. I think CD-ROM is a great idea, but I have a gut feeling that it will be better yet with the MPEG chip set. Can you clarify matters a bit? Is CD-ROM here to stay?



The A570 was the first Amiga CD-ROM interface (as opposed to a full CDTV). I doubt it will be the last either.

CD-ROM is here to stay, but exactly what direction it takes is anyone's guess. Commodore committed themselves to the MPEG standard – when the bits appeared for the rival CDI system – then they had to make 'an announcement'. Any actual new CD designs are vapourware – stuff which you can't buy yet and you shouldn't really until you've read a review or two.

4) I believe this one is unsolvable, but have a go anyway Pat. I own a very old Tandy DMP-400 dot-matrix printer. Try as I might I cannot get it to work with any printer drivers (and I have collected a few over the years). What is the correct driver? If you don't know, how would I go about editing or creating a new printer driver for it?

I don't know. People consistently bombard me with requests for printer drivers. I help where I can, but it's a job I'm not prepared to shoulder, mainly because I don't like broken shoulders. OK, you want to have a go yourself? Get *Amiga Printers Inside and Out* by Ralf Ockenfelds, published by Abacus at $34.95 (prices vary in the UK). The ISBN is 1-55755-087-5, which should help you in tracking down a copy. Read it, understand, learn how to use the supplied disks and months from now you might sort your problem out.

The problem is that there are many dozens of different types of printer, each with its own unique method of control. While many printers share similar codes for control (printer protocols like Epson 9 pin, Postscript, and Hewlett Packard variants) everybody wants their printer to work at its best capability, which means getting a dedicated, correct printer driver as opposed to the supplied ones on the Extras disk which work to a certain extent, but are not up to the high print resolutions available on the latest printers. If anybody wants to set up a driver library, let me know.

Techno Babble

Do you know how to talk techie speak? Well if you don't then this little bit of jargon-busting should sort you out!

Accelerator: hardware expansion that gives your Amiga a faster CPU. Often used with maths-intensive software where a standard processor is too slow, for programs called 'raytracers' which literally trace the rays of light which bounce around a scene to produce a picture. Also used to considerably speed up flight and other kinds of simulations.

Anim Brush: a brush is a small section of a graphic screen, cut out with a paint program like *Deluxe Paint*. Anim brushes are different small images with the same dimensions – for instance, a bird flapping its wings or an eye blinking.

Blitter: BLock Image TransfER device. Used for copying large areas of memory from A to B, or to combine different areas into one single image. Widely used to generate large graphic shapes in computer games.

CD-ROM: a storage device for playing compact discs. As well as standard music discs, CD-ROMS can play special computer discs that are massive in capacity compared to normal floppy discs.

Chip RAM: memory accessible by the custom chips (Paula, Agnus, Denise) as well as the processor. Used to store all graphics and sounds. Can be used by programs too – with speed slow downs.

CLI: Command Line Interface. The program which enables you to type commands into AmigaDOS for standard operations like copying files or getting a directory. Shell is more commonly used now.

Copper: co-processor. Used to generate subtly coloured backgrounds – this device is built into the Agnus chip and it can alter colours while the screen is being generated. Executes instructions at the same time as the processor.

CPU: Central Processing Unit. The decision-making chip, the one that tells everything else what to do. It can be interrupted by custom hardware if its programs are in chip RAM.

Fast RAM: memory that's only accessible by the processor. Programs stored here run faster than those in chip RAM – hence the name.

Frame grabber: device for capturing live video data and converting it into computer picture data. Doesn't require a still video signal. Usually gives much better results than a video digitiser, which does the same job, except that the video must be paused.

Freezer cartridge: quasi-legal device for examining programs while they are running. Usually with many useful built-in utilities which help overshadow its dubious origins.

Hard drive: basically a big disk for keeping Workbench and all the serious software that you use. Works much faster than a floppy disk. More and more games are becoming installable on to a hard drive.

IFF: Interchange File Format. A standard way of storing pictures and sounds, it was invented by Electronic Arts and adopted by Commodore. A single standard – practically all art programs can load and save pictures in this form.

Kickstart: the name of the set of programs which are run when the Amiga is turned on. Also contains many library functions for programmer use. Latest is Kickstart 3. Other releases; 2.05, 2.04,1.3, 1.2, 1.1.

MPEG: Motion Picture Expert Group. A bunch of individuals who set out to find means to store films and video on computer rather than photographic or magnetic means. Still some way off on the Amiga.

PD: Public Domain. Literally, software that is the property of everybody. PD disks can be freely copied by anyone, and you can also distribute them to whoever you want. The correct term is 'Freeware'. 'Shareware' (try before you buy) and 'Licenseware' (commercial and non-distributable) also come under the same rough heading.

ROM: Read Only Memory. Memory that cannot be altered. Widely used as the starting programs for computer systems that have just been turned on – ROMs remember things permanently.

RAM: Random Access Memory. Memory that can be altered and re-altered many times. Typically, it does not remember what it contains when the computer's power is switched off.

Script file: a set of commands which you would otherwise have to type into the CLI or Shell by hand. Saved as a text file. Learning how to use Shell or the CLI involves learning how to write script files.

Shell: more up-to-date version of CLI. Works in exactly the same way, but enables some flexibility in what commands are called via the 'alias' function. Also gives some hot-key combinations to enable some editing of previously entered commands.

Sound Sampler: hardware device that converts electrical music signals (typically from a tape or CD player) into computer sound. Can also be used with a microphone to capture live sounds.

Sprite: a graphic object that is independent of the screen. On the Amiga, sprites are limited in size and colours. Typically used for mouse pointers, alien missiles, and so on.

Startup-sequence: the name of the script file, contained in the S directory, which is executed after a disk has booted. Typically contains just the name of a program to auto-run, but can be very complicated. Whatever the nature of the file, it must always be called Startup-sequence and live in the S directory.

Workbench: the set of programs which sets up a graphical 'point-and-click' interface on the Amiga. Much more friendly than the CLI or Shell, but not as flexible. Always has to be loaded from disk, which is slow but does enable much customisation. Workbench 3 requires a Kickstart 3 ROM. Workbench 2 requires a 2 ROM, 1.2 needs a 1.2 ROM and so on.

Zorro: this is the generic name for the Amiga's expansion connector. The A500, A500 Plus and A1000 had the original Zorro I; the A1500s and the 2000s have Zorro II; and the A3000 and A4000 have Zorro III. They are not compatible, hence the different expansions for different machines. The A600 and A1200 have a PCMCIA connector instead.

Ladbroke Computing

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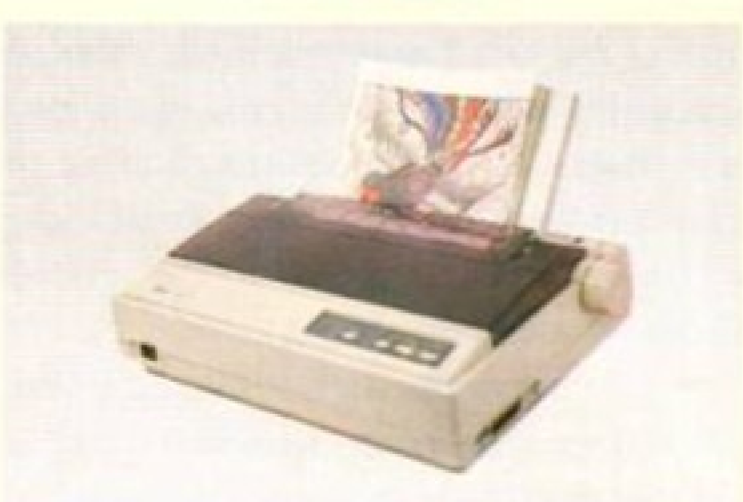
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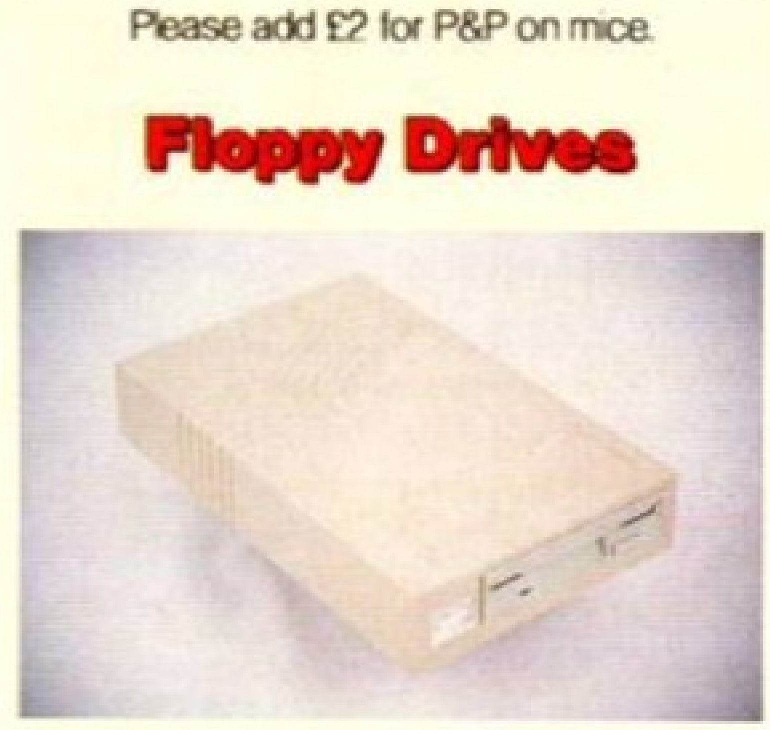
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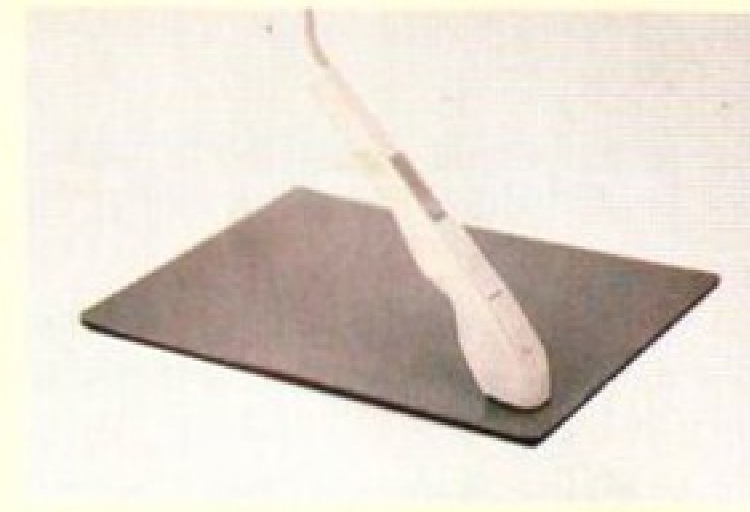
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Answerfile

Short snippets and extracts to help solve those little, tricky techie problems, all straight from **Pat MacDonald's** keyboard.

Q Could you tell me what the difference is between PAL and NTSC?

A 56 graphic display lines that's what. PAL programs have graphic displays that are taller with more scan lines than NTSC programs. Both PAL and NTSC are television standards for signals – you can't feed a PAL signal into NTSC equipment and vice versa without some alteration to the vertical hold control of your TV or monitor.

What programmers usually do is write their programs to use only the first 200 lines of the screen – that's why there is a blank area at the bottom of the screen. Such a program works fine on both NTSC and PAL Amigas. However, a full PAL screen program won't be so good on an NTSC screen – the bottom sixth or so is off the bottom of the display.

Q I just can't get *Formula One Grand Prix* working on my A4000. You said it was great on that machine, so how did you do it?



Driving round a circuit with all the smoothness a 68040 accelerator provides is the best way to appreciate *F1GP*.

A The way to do it is to disable the CPU caches. Hold down both mouse buttons when the machine is starting up, and then click on Boot Options. There is a little box with 'Disable CPU Caches' written next to it – click on this so that a tick mark appears. Then click on Use. Click on Graphic Options, and select the Enhanced Chip Set (ECS). Then click on Use, finally click on Boot and run the game from floppy. I regret I couldn't work out how to install the game to hard disk using the supplied program.

Q I want to learn how to solder – I don't really have the time to learn electronics, but can you give me a few tips to help with the odd upgrade or broken wire?

A Hmm. All right, here's a deal – if you're under, erm, let's say 18, then don't do it without adult supervision. The fumes from molten solder are very unpleasant and are also a health risk. Get a soldering iron, about 20 watts output at most (smaller irons are better for intricate work) and some resin-cored solder wire. Remember that the iron gets HOT.

Also get some scrap electrical gear – don't use your aunt's beloved Fifties wireless – some electronic scrap like a digital alarm clock or a cassette recorder from a junk dealer will do. A damp sponge is handy for cleaning hot soldering irons, and do get a decent holder for when you need to put the iron down safely. A desoldering pump ('solder sucker') is cheap and very handy for slurping up excess solder.

Make sure no power (even batteries) is going to your piece of electrical junk. Unscrew it and remove the circuit boards, disconnect all wires (but keep them) and connections so you what you have is a circuit board with lots of components soldered in.

Plug in the iron and switch it on. When it is at the right temperature, solder will melt over the tip (the tip end is known as the bit, and you can usually fit a variety of sizes of bit). Congratulations, you've just tinned your bit. Tinning is the art of applying solder.

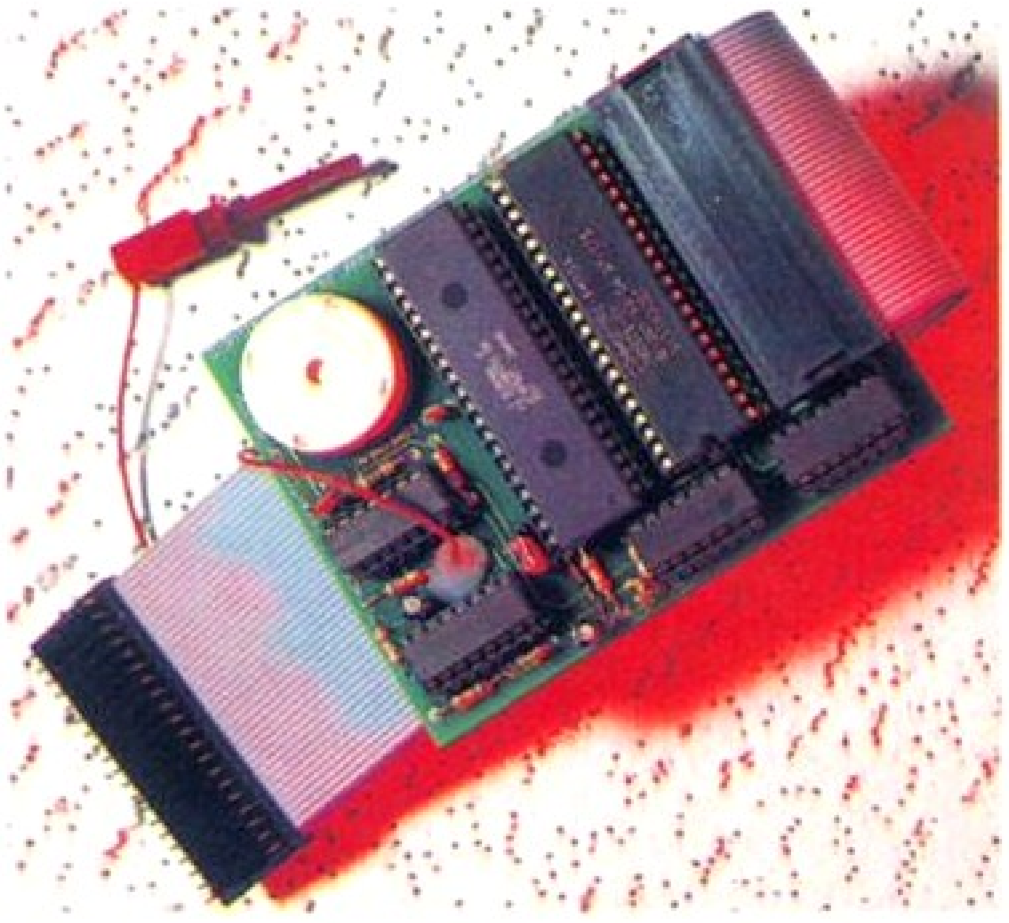
OK, with your freshly tinned bit, apply it to a likely looking blob of solder on the scrap board. After a short while, the solder will melt, and you can wobble the connector around (if you are frightened of burning your fingers, use a pair of pliers to move the components). Use a desoldering pump to suck away all the excess solder.

Gradually work your way around the components, cleaning the bit on the damp sponge and tinning it again (your bit should always be shiny and clean). Eventually, you'll be able to take out the components, although you'll probably burn the board slightly. Judging the heat of solder takes a while to learn, but is easily mastered – don't hold the iron to the board for long periods of time.

When you've finally managed to get all the components out, try soldering them back in again. Find a different bit of scrap board and repeat the process. Remember those bits of wire I told you to keep? Try stripping off some of the outer insulator, and with the iron and a bit of solder, tin the end.

Eventually, you will become confident enough to have a go at the real thing – a good place to start is making a null-modem cable for two-computer, two-player games. If you start dealing with chips, then anti-static precautions have to be taken (either wear an anti-static wrist strap or keep touching a water pipe every few minutes to avoid static building up which blows your chips). Get a basic electronics book out of the library and learn. Get really good and you may end up with a job.

Q How does a ROM sharer work? Please keep it simple, because I want better compatibility without more confusion!



'Ere, I've seen one of these before. It's one of them there Kickstart switchers or ROM sharers.

A Well I'll try to keep it simple-ish. ROM sharers are expansions which can take two or more Amiga Kickstart ROM chips. The idea is that you take out your present Kickstart chip and plug in the ROM sharer to the empty socket. Then plug the Kickstart into the ROM sharer, plus a different version of Kickstart. By flicking a switch, you can choose whether you want to use Kickstart 1.3 or 2.

Here's the technical version. ROM sharers are small circuit boards with two (or more) sockets, and a set of pins to connect to an Amiga ROM socket. The idea is that you carefully lever out your current ROM chip, and plug it into the ROM sharer. You then plug in a different ROM (Kickstart 1.3 if you already have Kickstart 2, or Kickstart 2 if you already have 1.3) alongside the present one, and plug the ROM sharer into the socket left by your present ROM. Usually there are jumper leads to wire up the change in ROM to a particular mouse button being held down, or the joystick fire-button being pressed, or a particular key being pressed, when the machine is resetting.

Q Why is it that all software doesn't work on the new A1200? Or the A600 and A500 Plus come to that?

A Lots of different reasons, but it all boils down to this – the programmer who wrote the incompatible program did not follow the guidelines on ensuring compatibility with future machines. Now, in the programmer's defence, it has to be said that a lot of the guidelines involve setting up the Amiga using the supplied Commodore routines, which is a bit of a drag and a lot of hassle (plus money for the correct, 'Official' Addison-Wesley guidebooks).

Not many programmers do stick to the standards. When Amigas change (different Kickstarts, Agnus chips, Denise chips) then the homebrew routines which work fine on an A500 tend to fall flat on their faces. The programmers scream 'don't change anything' on the one hand, while at the same time asking for more memory, standard hard disks and CD-ROM drives, better sound and graphics etc.

Q Is it legal to swap games? I mean, one boxed copy for one boxed copy? My friends and I often get bored of games, so is this all right or not?

A First, understand that I'm not legally qualified in any way and the situation varies from program to program, but as I understand things... Strictly speaking, no it isn't. You will find (often embedded in the small legal print in the documentation) that it is illegal to rehire, lend or otherwise give others access to the programs. The idea is that when you buy the software, you are buying a licence to use the product, not the actual software itself.

On the other hand, some software doesn't have any such messages anywhere in the documentation or readable within the program. Check the small print for yourself. Incidentally, this also means that it's illegal to sell your games collection when you sell your computer – second-hand software doesn't exist according to the conditions of sale under which you bought it.

Q I have been told that the Action Replay cartridges do not like Amigas with large amounts of memory. What is the limit?



The Action Replay III cartridge, while a hugely useful utility, does not like excessive RAM expansions.

A For the Action Replay II, 3Mb of RAM. You could go a little beyond this if you are clever, but 4Mb and up is a big no-no – the cartridge will not work. (The same goes for Action Replay III.)

Q Why is there so much computer speak in *Amiga Format*? Why use jargon?

A It's shorthand. Every craft, market, hobby has its own breed of special words and acronyms, to save on ink and get more information into a smaller space. We *do* try to explain jargon where we use it, but what makes jargon unreadable is that the person reading it has no explanations – which means we have to use a bit of discretion about what we explain.

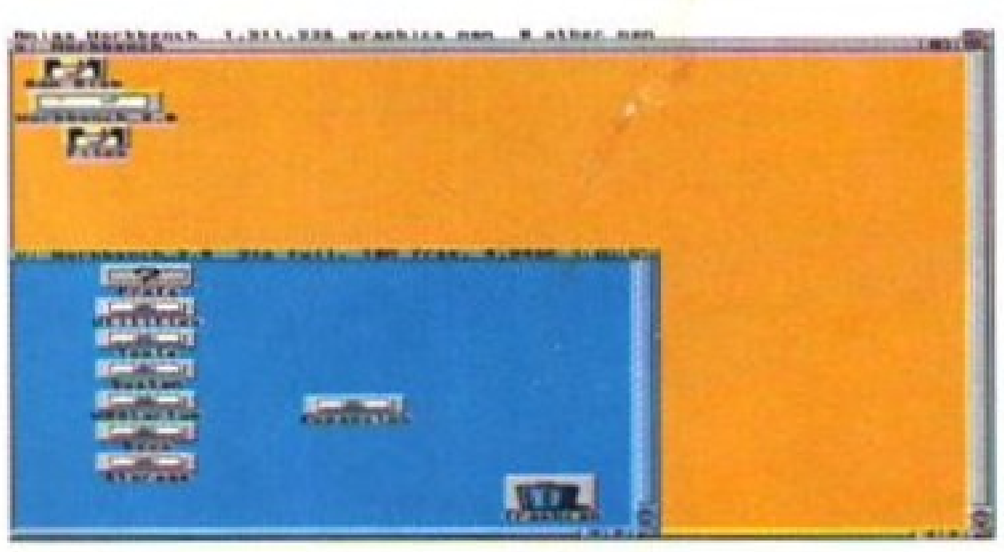
Is RAM a jargon term, or part of Modern English? How about printer? How about scanner? How about floppy disk? Write to Damien the editor via Letters if you think there's too much jargon, or tell me what you don't understand and I'll try to explain.

Q Do you read all the letters you get?

A Yes. If it's addressed to Pat McDonald, Workbench, Answerfile or Amiga Answers via the ***Amiga Format*** office, I read it. I don't get to answer many of them due to lack of space, but all entries are carefully considered. Usually I answer a mixture of the common and the outlandish.

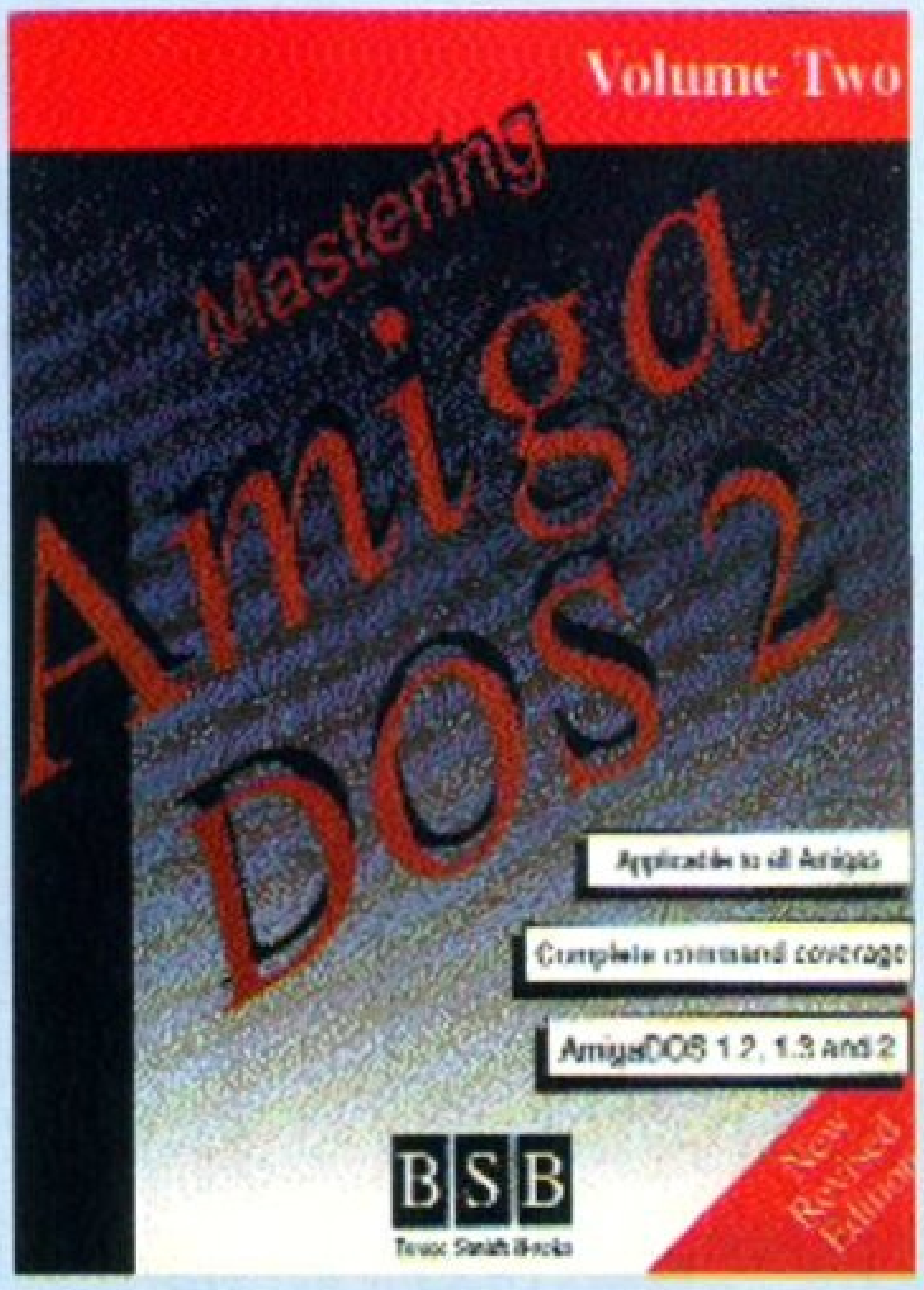
Q Can I upgrade my Amiga to Workbench 3? Can I just boot a Workbench 3 disk in my present Amiga?

A You cannot boot a given version of Workbench unless you have the relevant Kickstart (turn back to Page 196 and see 'Techno Babble'). It is possible to upgrade A3000s to use Workbench 3, but not (at the present time) any other Amiga that does not already have it.



A3000s are the only Amigas that can upgrade to Workbench 3 and get this fab desktop.

In-depth explanation
No 11: AmigaDOS



For a copy of the above, simply phone Bruce Smith Books on 0923 894366.

1 Operating System; the software that forms a bridge between different elements of the computer (screen, keyboard, programs and so on). The abbreviation is OS. Disk Operating Systems are OSs that can in addition cope with talking to and listening to disk drives (as opposed to older tape-based systems). AmigaDOS is, quite simply, DOS for the Amiga.

2 A lot of people think that Workbench is the same as AmigaDOS. Workbench is not the same – it's a convenient illusion for what is going on in the background. Traditionally, OSs have been controlled through the keyboard. In the mid-Eighties, WIMP (Windows, Icons, Mice, Pointers) systems made computers more accessible, and the Amiga uses all four – you generally use Workbench to use the computer, but for many tasks you have to talk to AmigaDOS directly through the keyboard. To do this, you have to double click on the Shell or CLI icon found on the Workbench disk.

3 Once you are in the Shell or CLI (Shell is nicer, but only available on Workbench 1.3 or later) you will see a number with a prompt. This is the number of the Shell process – you can have up to 20 Shells or CLIs open at the same time. If you want another window, just type NEWCLI or NEWSHELL and press Return. To get a listing of the current directory, type LIST and hit Return. To get an alphabetical listing (which doesn't show the size of files) type DIR and hit Return.

4 The first name you enter into a Shell line is the name of a program on Workbench. What you are really doing when using Shell is running programs – differently named programs do different things. Most of the commands can be found in the C directory. If you want to have a look at them, type list C (notice that AmigaDOS doesn't care whether or not you use capital letters). To stop the screen scrolling, press any key – press the Delete key to continue with the directory.

5 The AmigaDOS commands in the C directory need a certain amount of housekeeping in order to operate. To put it simply, there has to be a T directory, either on your Workbench disk or, more usually, set up by Workbench in your RAM disk. This T directory is a temporary storage area, used by commands such as Copy, Diskcopy and others. If your computer keeps asking for volume T, then the directory hasn't been set up and the commands cannot work properly. In addition, ENV has to be available, and (on Workbench 2 and above) an ENV-ARC directory. The Clips or clipboard directory has a similar purpose.

6 Rather than continually typing lists of commands into the Shell or CLI, you can instead write a script file with a word processor or a text editor. Such a script file is simply a list of AmigaDOS commands, together with the arguments. An argument for a command is the bit that's not the command name – for instance, List c. List is the command and c is the argument, and refers to the c directory on Workbench. Much more complex arguments can be used when you know your way around AmigaDOS.

7 The most common usage of script files is the startup-sequence file. This lives in the S directory (type list S to have a look) and is a list of AmigaDOS commands. This script is executed automatically when Workbench (or any other AmigaDOS disk) boots.

If you want to have a look at a startup-sequence, then bang this into a Shell or CLI; Type s/startup-sequence. Alternatively you could load the file into a word processor or text editor.

8 Many of the commands in the C directory are only for use in scripts. For instance, the Echo command prints text messages, the If, Then and Else are for making decisions in scripts, and the Jump and LAB commands are for jumping around to a different label in a script file. The point I'm trying to make is that there is a lot of support on Workbench for script writers – but you don't need to know about it in order to use Workbench. It comes in handy when you are trying to customise Workbench, and designing your own disks.

9 Do not think that all the AmigaDOS commands you can get are on Workbench. Many, many Public Domain and shareware commands have been released over the years – utilities for doing things like setting the current font in use, opening a window, clearing the printer channel or testing MIDI equipment, to name but a few of the categories. The most successful commands usually end up being bought by Commodore and placed onto the latest versions of Workbench.

10 AmigaDOS commands have some compatibility between different versions of Workbench, but some won't work on different releases. So, if you try to use the 1.3 Install command on a Workbench 2 machine, it will not work (it usually crashes the machine). This means you have to be careful when making your own disks, because if you use an incompatible command you will prevent some people from using your disks.

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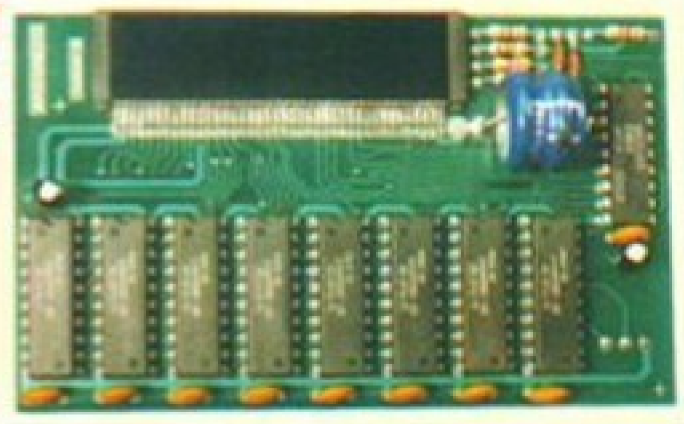
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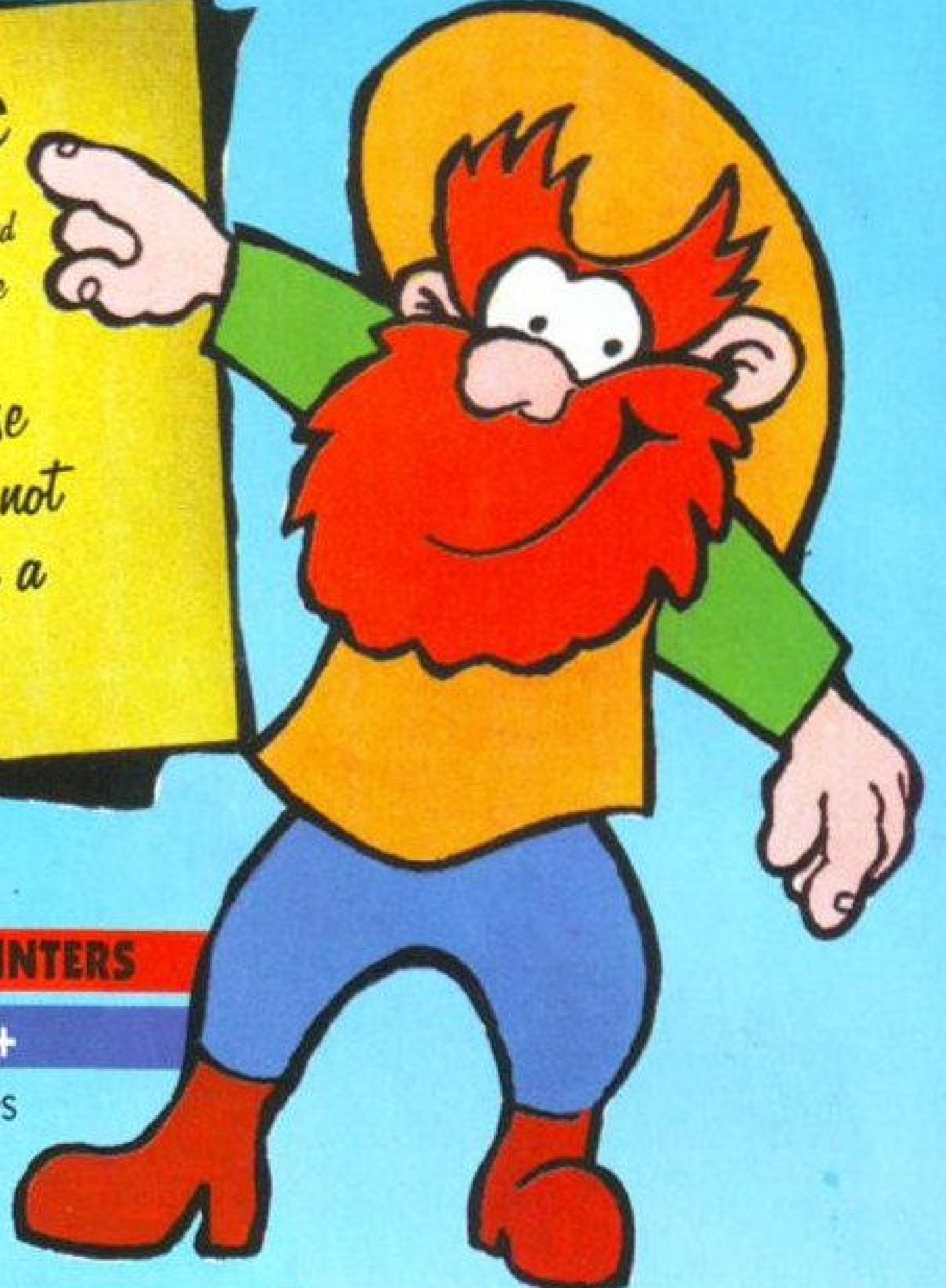
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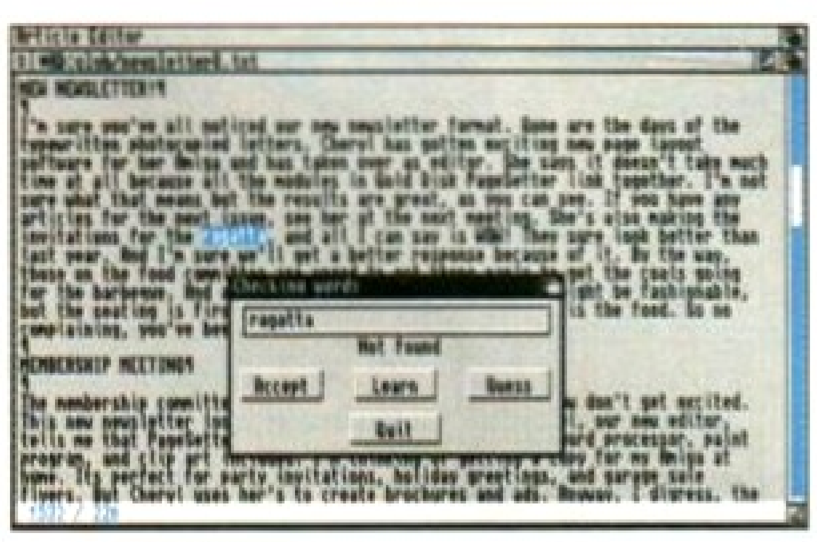
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WORKBENCH

If you have any problems with the technical side of your Amiga, with hardware or with serious software, Pat McDonald will try to answer you in the mag. Or, if you have any advice for others or any handy tips to share, send it in and you could win a prize.
WORKBENCH, ***AMIGA FORMAT***, 30 MONMOUTH STREET, BATH BA1 2BW.

GAMEBUSTERS

If you've just found the cheat mode, mapped out the levels or found all the passwords for the latest game, send the info to Nutts and you could win a prize. Or, if you're stuck, ask Helping Hand for advice – or solve someone else's problem and win a prize!
NUTTS, GAMEBUSTERS***AMIGA FORMAT***,
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LETTERS

The letters pages are there for you to air your views and share your opinions: please remember not to ask questions that should be in Workbench! Damien is looking for thought-provoking or entertaining letters, the shorter the better. Prizes given for the best two.
LETTERS TO THE EDITOR, ***AMIGA FORMAT***,
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Letters

Welcome, one and all, to the first Letters page of 1993. As ever, this will remain the premier Amiga forum in this fresh, new year – which basically means it's the place where all things Amiga are discussed not by those boring old writers, who get their say in the rest of the magazine, but by you – the readers. Why not have your say next time around? The address to write to is Letters, **Amiga Format**, 30 Monmouth Street, Bath BA1 2BW.

A1200 THUMBS UP

PRIZE

Can I, through your pages, congratulate Commodore on finally releasing a worthy upgrade to the A500, namely the A1200. 32-bit processor '020 2Mb machine for under £400 is one hell of a bargain.

I'm predominantly a gamer, although I do use my Amiga for music (*OctaMED Pro*, if you're interested) and maybe this will mean arcade-speed games with arcade-sized sprites. *Speedball* on this beast doesn't bear thinking about!

However, what do I do with the Kickstart 1.3 software I have? You said that the new chips can be set up (via the boot screen) to emulate the older chips, but how much of my older software will be worthless?

I'd love to own one of these machines, but are any third parties going to develop Kickstart ROM sharers? I doubt it, because surely it would mean incompatibility with the processor and its speed, or will this not affect it?

Also, for an extra £100 surely Commodore could have included an upgraded sound chip? After all, even sub-£500 the A1200 would still have been a bargain. Maybe then the music industry, as well as software houses, would take the machine seriously.

NR McIntosh, Warley

PS Why not offer readers a free subscription to your mag for a decent thought-provoking letter? Beats a T-shirt any day!

Taking your last point first, the reason we don't offer a subscription as a prize is because a prize letter winner might be a subscriber. Having said that, I like the idea. You're the first to win a free subscription and a smart AF *pin badge for a letter prize.*

Please indicate on your letters from now on whether you'd prefer a subscription and a pin badge or a binder and a T-shirt if you are lucky enough to win a prize – and we've got some new 1993 T-shirts under preparation now.

You're quite right that the A1200 is an extraordinary machine, but the £399 price is important. Commodore made the point at its launch that they could have included the high-density disk drive (stores twice as much data on a floppy) or a DSP (Digital Signal Processor) chip for improved sound, but bearing the price limit in mind the software houses voted for the 2Mb of chip memory.

A Kickstart ROM sharer would not conflict with the processor and could, indeed, make the A1200 even more compatible. As for how much of your software will run on the A1200, well, it's anyone's guess. We reckon the hit rate is pretty good and is certainly worth the risk of buying an A1200.

A1200 THUMBS DOWN?

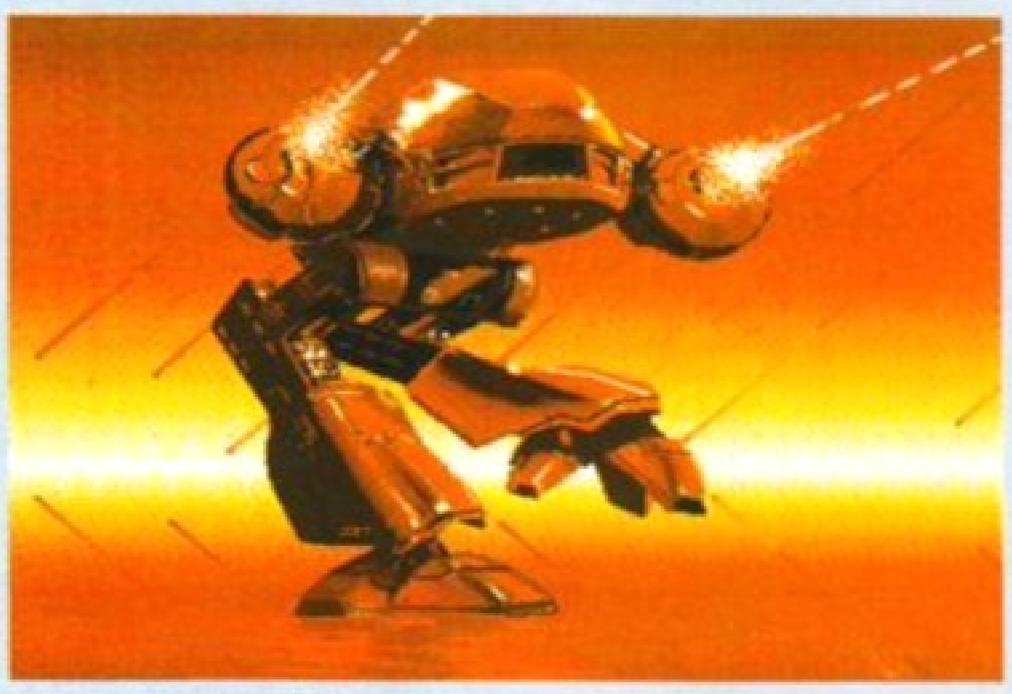
Could you tell me what will happen to the A600? And if it does get scrapped, is there going to be a part-exchange for the A1200?

In November, I bought an A600 thinking it was

Continued overleaf

VisionOn

Got a picture you're proud of? Send it in, see it in print and win an *Amiga Format* binder! Since Letters is where you get to contribute your words, we thought it would be the perfect place to see your pics on display too. However your image was created, whether you've sketched it in *DPaint* or generated it with a ray-tracing package, we'd like to see it. Only the best will make it into these hallowed pages. Send your entries on disk in IFF format to The Gallery, Letters, *Amiga Format*, 30 Monmouth Street, Bath BA1 2BW.



ED-209 By Nils Erichsen of Skien in Norway.

going to be the best of the Amigas for the price. Then clever old Commodore brought out the A1200 and I thought this was going to compete with the PCs, then I read the review in your magazine and saw the price was only £399.

You might be thinking, well, he's got a perfectly good computer. But if I had known that the A1200 would be only £100 more then my first choice would be the A1200.

Colin Todd, Newark

Fair point. The A1200 is a wonderful machine and the great thing about it is precisely that everybody wants one – it's recreated the buzz of the A500 six years ago in that respect, and at the same price of £399.

That having been said, the A600 isn't dead – never mind the A500 and A500 Plus. We'll still be getting as much in the way of great games (and also serious software) as we have ever had.

And in some ways, there's an even bigger shake-up on the way. When CD arrives in style, an awful lot of us will be looking on in envy and discovering that it will cost quite a bit to upgrade.

You pays your money and you takes your choice. Right now, I'd choose an A1200, but you can't regret owning any kind of Amiga.

CDTV FAN

At this moment in time, I've had my CDTV for five days. I thought I'd died and gone to heaven! Fantastic.

On the first day I rushed in to my electrical retailer and bought Domark's Trivial Pursuit. OK, I know it was £50 – but surely worth it. I've been playing it for almost five days and nights non-stop – well, minus sleeping, going to work and eating and... well, you know.

May I just ask, can we have more space in your mag? If anybody has been wondering whether or not to buy a CDTV, then please take the opportunity now. You will not regret it!

Colin McAllister, Nelson

No, you can't have more space. As it is, we review every CDTV title that comes out and also every piece of hardware for it (one so far, the internal hard drive from Calculus, with more to come in the form of an external hard drive next month).

I've been accused recently of having a Swiss bank account in which to stash the backhanders Commodore dish out in return for our continued support for the CD concept. Wouldn't it be nice!

But anyway, I'd just like to make the position clear. I really wouldn't advise anyone to get a CDTV at the moment. It needs Workbench 2 and more RAM before it's a viable concept, and a new version with the AA chip set in would help immensely.

What I am in favour of (and, by policy, the magazine is too) is the idea of CD as a storage medium for entertainment software. It will happen, and if you're against it, you're like Canute trying to hold back the tide.

COMMENT

Congratulations on the article 'The Year Ahead' in the latest issue. I read it with great interest.

A plea from me! As you know, I am responsible for fostering CD development in Europe with the development community. Many owners of CDTV are using their systems as Amiga computers and it would be of great help if you could declare on your Coverdisks whether or not they work on a CDTV, or on the A500 Plus with the A570 drive.

The reason is twofold. Firstly to give comfort to CDTV owners. Secondly to encourage the development community to write system-legal software, allowing for the presence of CDFS. In this way we can 'future-proof' software, and encourage developers to prepare for CD versions.

Jim Mackonochie,
General Manager,
CDTV Development,
Europe

As a matter of policy we like to ensure that all software on the Coverdisks is compatible with all versions of the Amiga, and in this respect we treat the CDTV as just another kind of Amiga. We wouldn't single it out for labelling any more than any other machine.

System-legal programming is a bit of a can of worms. Many developers we have spoken to are keen on the idea of making all their software hard-drive installable, which goes hand in hand with system legal. However, many also feel they can only achieve the best quality by ditching the system.

I think the best solution is to emphasise the role of CD as a solution in its own right. After all, hard drives will hardly be necessary for playing games when a CD drive is the commonplace standard. We are committed to CD and are looking to further its cause with developers all over the world. This was part of the reasoning behind that article – to see how aware the Amiga community is of the direction in which the wind is blowing...

1200 TESTED

We were surprised to see that despite the promises of the specification our new A1200 did not seem to be that much faster than the old one. We decided to do some speed tests and I thought you may be interested to see the results.

Many speed tests seem to quote "24 hours ray-tracing time reduced to..." which seemed a bit far away from the average user to us, so we stuck to simple day-to-day operations.

Our two test machines were an A500 Plus which was fitted with 2Mb and a second disk drive, and an A1200 with 2Mb of RAM and two extra floppies. Here's the results, with the 1200's figure first and the Plus' figures in brackets...

Test one: loading *Pagesetter 2* and then loading a two-page document. Loading took 80 (68) seconds and then the project loading took 40 (53) seconds.

Test two: using *DevPac 2* to assemble a 4486-line program. *DevPac* took 47 (40) seconds to boot up, with the assembly taking 25 (38) seconds.

Test three: laying down a perspective brush while using *Deluxe Paint III*. With no anti-aliasing this took 2 (2) seconds and with high anti-aliasing it was 41 (79) seconds.

Test four: a search/replace test in a document with 892 occurrences of a word, using the *Wordworth 2* demo from your Coverdisk. This took an astonishing 640 (880) seconds.

Some of the loading times are slower for the A1200: this is because of the longer reset time which we felt it was valid to include because you have to sit through it.

Taking the averages of these results you find that the A1200 offers a speed increase of 1.4 times over the A500 Plus. A machine code memory cycle test shows the A1200 to be four to five times faster, so the question arises as to where has the extra speed gone?

Michael Hughes and David Butler,
Brunel University

It's a very important point. Just because the A1200 is clocked faster doesn't mean it actually will make everything faster.

As you've discovered, the 'pure' speed increase is indeed four to five times. This will only apply in practice to certain kinds of programs, however, and 3D stuff in particular.

Loading from disk will be no quicker, because it's the speed of the disk drive, not the processor, that matters there. One other factor is that your Plus with 2Mb includes 1Mb of fast RAM, which as the name suggests is more rapidly accessed for certain jobs.

But remember, all potential 1200 buyers: just because it's nominally faster doesn't mean it is in every situation.

PIRACY 1

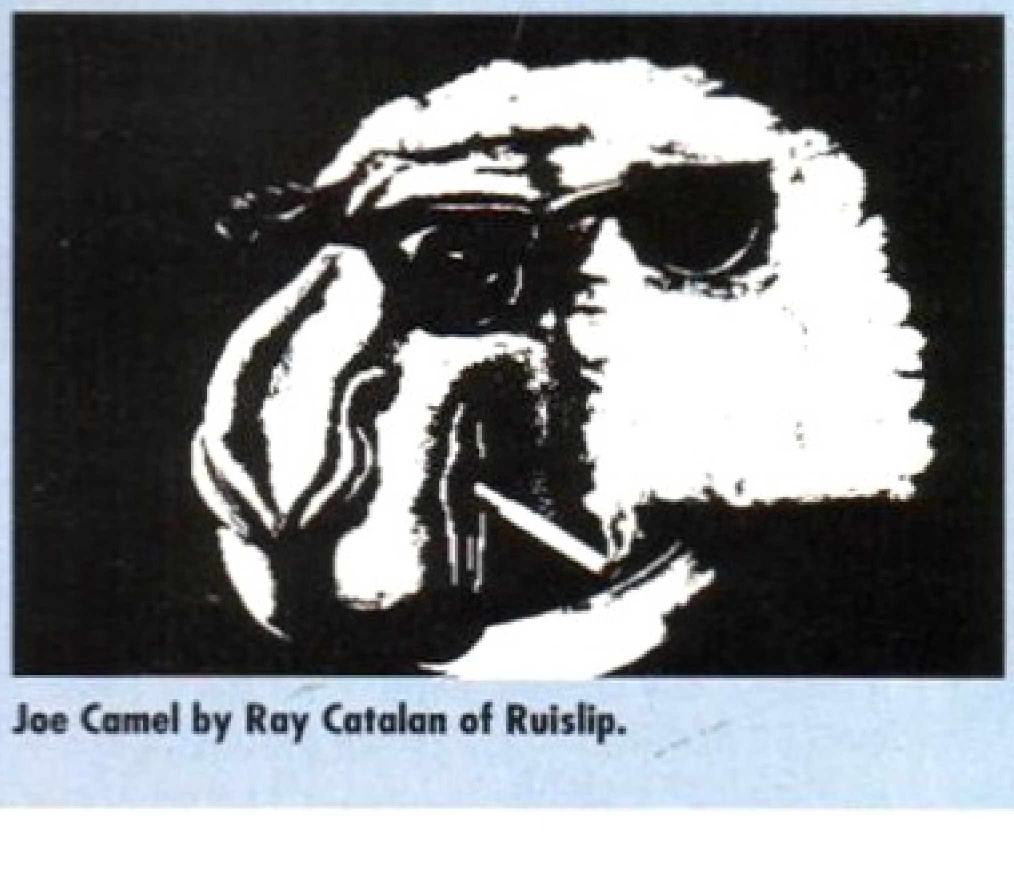
Why does everybody think that if pirated games stopped circulating, that prices would subsequently drop? They wouldn't!

Why were audio CDs so expensive in the first place? Because nobody had the CD players so nobody was buying CDs. Nowadays, LPs are virtually extinct and yet CD prices are still around £14! But why, since CDs represent an enormous proportion of sales, don't

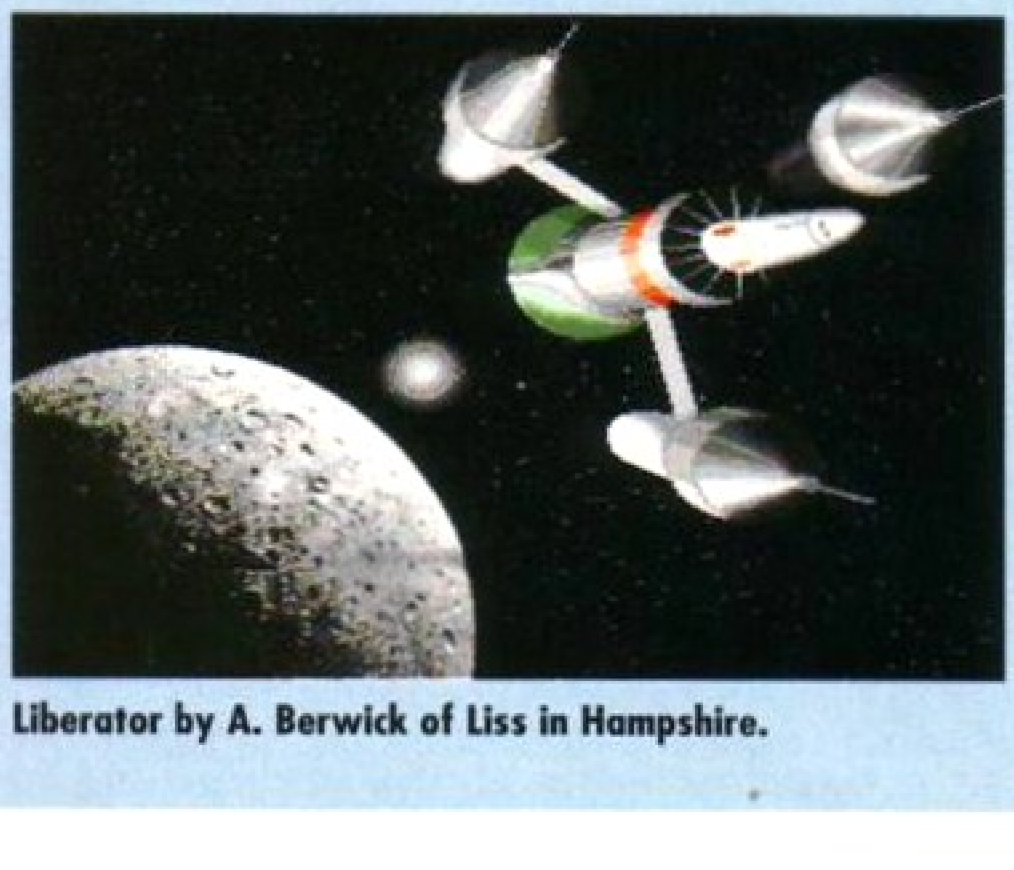
Continued overleaf



Hi-Dive by Mark Lockett from Manchester.



Joe Camel by Ray Catalan of Ruislip.



Liberator by A. Berwick of Liss in Hampshire.

DISSENT AND SENSIBILITY

The Amiga 500 stood still between 1985 and 1991 while the PC has gone from strength to strength and now encroaches on territory once occupied solely by the Amiga.

In the same way Commodore messed around with unsuccessful variants on the C64, I consider the same thing to have happened with the A500 Plus and the A600. Now with the release of the A1200 they have done it again – or rather half-done it!

The two biggest and most unforgivable omissions are a high-density floppy drive and enhanced sound. This is what I wanted from an upgrade to the Amiga A500: VGA-comparable graphics; 256 colours on-screen; hardwired line drawing; MIDI port; high-density floppy; 68030 or 68020; four extended joystick ports (Nintendo type); eight-channel, 16-bit stereo sound or DSP; SCSI interface.

Only three of these have been included, which is just not good enough. I don't think that these are unreasonable considering the basic Amiga architecture is now eight years old. If an upgraded Amiga with just two or three of these had been released every couple of years, at the same rate PCs have increased in power, we might have had all of these additions in a bog-standard home Amiga.

Instead we have the latest cock-up from Commodore – the A1200. Granted it's a leap forward, but again it is half-done. I think they should release another computer, call it the A1800 or A2400 and incorporate all – ALL! – of the above upgrades. I would pay an extra £100 for them.

Lastly I would like to say something on the subject of CD. I've read the answers to the five questions you put to various developers, but nobody mentioned anything about Sony's new mini-disk format. Wouldn't that be an answer? The actual mini-disk is slightly smaller in size than a standard 3.5-inch floppy but can store the same amount of music as a normal CD with just a claimed very slight loss in quality and thus the same amount of data (640Mb). An important factor, though, is that the mini-disk, as well as producing read-only disks like CDs, can also be used for re-recordable ones just like a normal floppy. Maybe you should investigate the potential for its use as an alternative to the standard floppy.

It seems to me like the perfect solution, until cheap, high-capacity PCMCIA cards are available: I've been told that a gigabyte card with the speed of static RAM has been developed.

Amer Butt, Manchester

To be fair to Commodore, I think they made it quite clear that certain of the items on your list were seriously considered for inclusion in the A1200 – in particular, the DSP chip for improved sound and the high-density floppy were on the drawing board but 2Mb of chip RAM as standard was preferred. The reason they had to compromise was to keep the cost down to £399 – after all, this stuff all costs money.

A high-density floppy should be available as an add-on but makes little sense as part of a standard set-up when the Amiga is moving towards CD. Improved sound is not a pressing priority when extra chip memory allows you to have vastly improved samples.

I firmly believe IDE is better than SCSI for the smaller home machines in the Amiga range because it makes for cheap, portable internal hard drives. MIDI is really a bit unnecessary – I don't think it sells computers – and the four joysticks is one of those rather off-the-wall ideas. Which leaves what? Hard-wired line-drawing, for 3D work. Trouble with that is it could mean changing the Amiga architecture, and with a faster processor to throw speed at the problem, it really becomes less of a necessity.

As for mini-disk, it uses data compression to achieve near-CD quality so the data capacity is actually a lot less. On top of that, the last thing the software industry wants right now is a piratable read-write medium.



Winged Serpent from Mr J Lock of Tetbury.

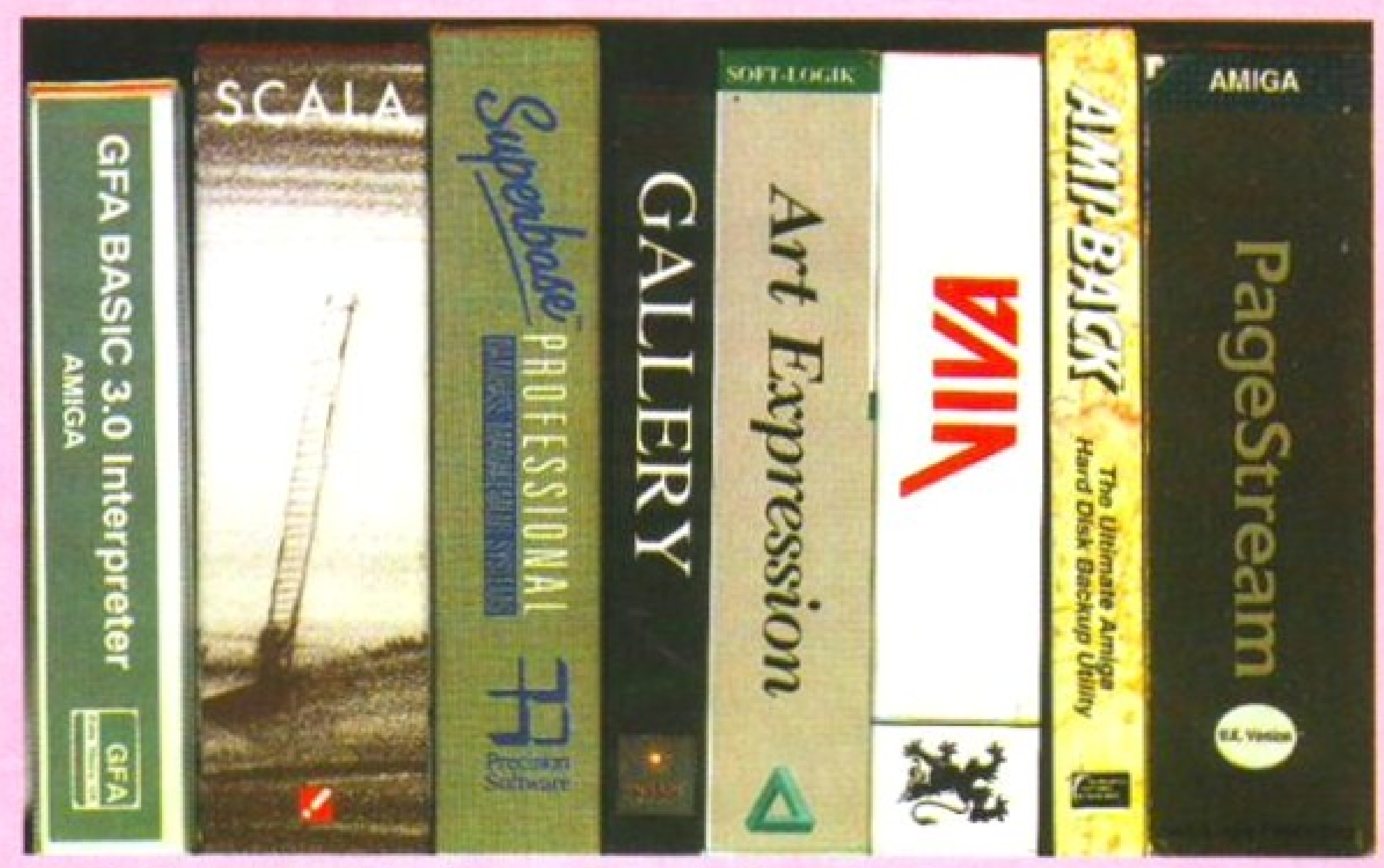


Next month Issue 44 March 1993

Hard Driving

Hard drives. Wonderful things, everyone should have one, but not everybody does. We show you what you get for your money, and tell you how to get more for less. We give step-by-step instructions to guide you through the mine field of fitting an internal hard drive in your A600/1200. And a full buyer's guide will reveal which drive is the best quality and which is the best value, no matter which model of Amiga you have.

The Amiga Format Instant Software Library



A quick glance at the *Amiga Format* software shelf reveals a fascinating array of boxes, but do any of them hold product good enough to make the *Amiga Format* Instant Software Library? Find out next month.

The Amiga is a powerful computer, but without an adequate collection of software, you could be missing out. Next issue we're going to take a look at every area of home computer usage, from games to 24-bit ray tracing and everything in-between. In each area we'll be making buying recommendations in three price ranges, from the next to nothing right up to the ultra high end (and ultra high priced). A quick browse of our Instant Software Library will enable you to build up a system that will do what you want at a price you can afford. An in-depth read of our indispensable guide will show you just what can be achieved with an Amiga, some imagination and the right software.

Waiting for you at your local shop from **February 11!**

they get any cheaper? Because the manufacturers are making millions and don't fancy making less!

Why on Earth should Amiga games get cheaper? So the software houses make less money? Don't be so naive out there!

Piracy is making more money than it's making losses. Let me explain this to you. Without piracy, I would never even have dreamt of getting an Amiga. I knew someone who got regular loads of games, about 20 a week, all free except for having to buy blanks.

So I reckon that software companies haven't lost a single penny because of me. On the contrary, lots and lots of people have made money because of me having pirate games, and so having bought an A500, 1084 monitor and lots of other hardware and extras.

Paperback Writer of Paris/London

Your last argument is typical selfish tosh and I disregard it utterly. What it completely ignores is the fact that you've got plenty of money to spend on your hobby, but you are not willing to give any of it to the people who spend their lives working to create the games you play.

I'm not talking about the software publishers: I'm talking about the programmers. Many of the most talented have already left the industry because it's simply not worth their while. They can make more money being accountants. You are ripping them off personally, just as badly as if you broke into their houses and nicked all their kit. Since you get hours of fun out of their games, I reckon that's appalling.

Your point about CDs, however, is an interesting one. It's pretty obvious that the music companies ripped us all off on that one, using it as an excuse to cynically manipulate the cost of recorded music: and they'll do it again with DCC or mini-disc if we give them the chance.

The difference with CD storage for games is that the software publishers are committed now, before it really takes off, to ensuring that it works at a reduced price. So they won't be sitting there thinking "Hmm, these £45 prices are a bit profitable, aren't they? Let's not drop the price just yet," and not ever doing it. They'll be committed to it from Day One.

THREE EQUALS FIVE

According to my bookshelves, Douglas Adams wrote four books on the subject of Arthur Dent's galactic misadventures and... err... four books do not exactly constitute a trilogy, right? Yet that's exactly what Andy Nuttall quite wrongfully claims in his Infocom review in Issue 40.

See, a trilogy is more like a collection of three related works (Greek 'tri' means 'three', 'logos' means 'word'). Mr Adams' *Hitchhiker* saga would really be more of a quadrology.

Lasse Nielsen, Brabrand, Denmark

A fair point, but though your use of the English language is most erudite, you're a bit behind the times. Douglas Adams has just released the fifth book in 'the fifth in the increasingly inaptly named Hitchhikers *Guide trilogy'. So you see, it's all a bit of a joke, really.*

PIRACY 2

I am what you would call a pirate – I have loads of copied games. It occurred to me that if FAST are so hell-bent on catching these people who hack or crack original copies of games, then why don't they read the intros to the cracked games, because they give BBS numbers and PO Box numbers. Surely between FAST, British Telecom and the Post Office these people can be traced? Granted, some of them live abroad, but other countries must have an equivalent of FAST.

A Nony Mouse, Anywhere

A very fair point, and one I feel is worth bearing in mind for all concerned.

CHEAP DRIVES

I am an amateur radio ham (call F6AFC) and I use my Amiga to send colour pictures all over the world in SSTV mode (Slow Scan Television). I've used the *CrossDOS* Coverdisk program to import some picture files from PC disks. It's working all right, but can you tell me what software (preferably PD) I could use to convert .SS, .SS1 and .PIC files to .IFF files to use with *Spectracolor Jr*?

What do you think of Project Bynery's project to use PC controllers and hard disks to build a hard disk that can interface with the Amiga 500? Do you have any information about that subject?

Jean-Pierre Blanchard, Valentigney, France

I've never heard of the formats you mention – if there's anyone out there who knows of a program that does the job, please get in touch.

Meanwhile, we haven't come across the Project Bynery device that you mention, but we did have a really rather interesting story from a reader on the telephone the other day. Apparently, Cumana do an interface that fits inside an A500 trapdoor that allows you to use an old-fashioned PC hard drive of the ST-506 type. The advantage of these is that they are cheap. Our reader had fitted himself out with an 80Mb drive in his A500 for only £70 – a real bargain.

STRANGE...

I use an Amiga 1500 Plus, Workbench 2.04, a GVP Series II hard drive controller and a 52 Mb Quantum drive. All four Workbench disks came with my machine, but my query concerns the Install disk, which for some reason I decided to have a play with.

In the Prefs drawer of this disk there is a Locale icon. Isn't this a Workbench 3 tool? If so, what's it doing on the Workbench 2.04 Install disk? There is no program there, just the icon. I'd just like to know what use it is.

Secondly, can you give me a date as to when the Workbench 3 upgrade kit will be released? Have you got any idea of the price?

MG Westwood, Wolverhampton

It surprises us that there's a Locale icon on your version of Workbench, although perhaps it's been there all along and it's just that no-one noticed. The idea of Locale is that it's a function that programmers can use when they want to write software that will be used in different countries and different languages.

By setting his or her Locale, the user then automatically chooses that programs will boot up by using the appropriate language. Programs that take advantage of it will check to see the Locale and boot up appropriately.

As for an upgrade to Workbench 3 – Commodore have made absolutely no announcement of whether they will issue an upgrade, never mind when. The problem, of course, is that the real key to Workbench 3 is its support for the features of the AA chip set, which you can't fit in a lesser Amiga because it needs full 32-bit.

There is a rumour that Commodore will release a version of Workbench 3 for the A500, A600 and so on under the name Workbench 2.1, but again we have no official confirmation of this from Commodore.

TOP OF THE CLASS

I am 12 years old and have owned an Amiga 500 Plus for about a year. In my school we are still using BBC micros for computer studies. I'm not writing to put the BBC down, but I only know of three people in my year who own one. In my class alone, out of 29 pupils 14 have an Amiga of some kind.

I think there should be an Amiga in every school. For a start the Amiga has far superior graphics and sound capabilities; just look at *Deluxe Paint* and *OctaMED*, to name but two. I and many people have asked teachers about getting an Amiga for the school, which they respond to by saying that they are going to get some new computers, namely Acorns and PCs.

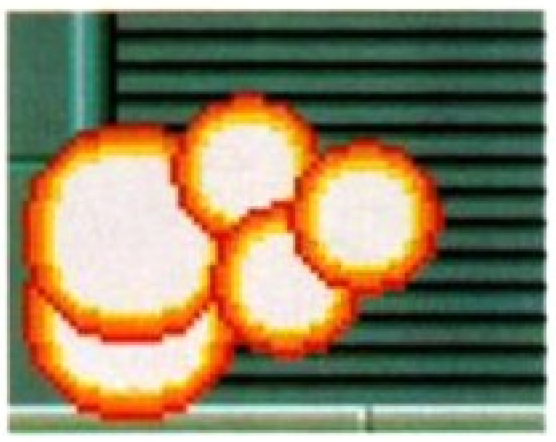
The reason they give is that the PC is easier to use and all the Amiga really is is a glorified games machine. This attitude towards this amazing machine is very sad. Join the crusade to get Amigas into school.

Daniel Thomas Gibbins, Swansea

Sadly, the fact of the matter is that you people – the pupils – know an awful lot more about computers than your teachers do. Worse still, most of the decisions on which computer to buy are made by the LEA (Local Education Authority) and not by the school, so your teachers actually don't have any choice.

A few enlightened County Councils have realised not only that the Amiga is a superior machine in itself, but also that it is to the advantage of schools to use computers that the pupils are familiar with. If you lived in Somerset you might well be using an Amiga in your art classes, or in Birmingham you might be learning music with one.

Spot the shot 43



Simply identify the game that this small portion of a screenshot is from, write the answer on a postcard with your name and address and send it in to us. The address is Spot the Shot 43, ***Amiga Format***, 30 Monmouth St, Bath BA1 2BW. The first correct entry out of the hat every month will win a fabulous ***Amiga Format*** T-shirt!



The winner of Spot the Shot 41 is Koubdjanian Sylvian from Lyon in France. There's an *Amiga Format* T-shirt on the way to Koubdjanian, who enters spot the shot every month, and always on nice postcards.

Competition craziness

It hasn't escaped our attention that we've forgotten to announce the winners of a number of recent – and very exciting – competitions that have been run in this magazine. So as a kind of post-Christmas binge, here's the lucky winners of them all. Is your name here? It may well be – best of luck!

EMPIRE'S CAMPAIGN COMPETITION

Launching their exciting battle strategy game Campaign on the world, Empire agreed to donate two full eight-video sets of The World at War series and five sets of the Chronicles of World War II magazines as well as 25 copies of the game. Videos, books and a game go to WG Anderson of Glasgow and Philip Baker of Stourport-on-Severn, a set of books and a game to James Mullen of Walton, Adam Bower of Aylsham and MJ Pearson of Halesowen, while the rest are too numerous to mention here!

CALCULUS A570 COMPETITION

AMIGA FORMAT ISSUE 35

Calculus were a bit premature here – it seemed that the A570 was about to go on sale but it turned out that the CD-ROM drive was delayed, hence the lateness of this. Anyway, here are the five lucky winners of an A570: Iain Stewart of Freemantle, Southampton; G Newman of Brimbscombe, Stroud; N Grigg of Higham Ferrers, Northants; Peter Boyall of Peterborough; and Mrs M Hodgson of Kings Heath, Birmingham. Well done!

PHILIPS CM8833/II MONITOR COMPETITION

AMIGA FORMAT ISSUE 39

Philips started giving away Lotus II with each monitor sold, so to announce the fact they kindly agreed not only to give two monitors away, but also to take someone for a slap-up day out at the British Grand Prix. Fab! The people who will be on the receiving end of the best Amiga games monitor there is are P Hook of Uckfield and Jane Dunn of Liverpool, while the grand prize goes to Steve Taylor of East Dereham.

SSI ROLE-PLAYING GAME COMPETITION

AMIGA FORMAT ISSUE 39

US Gold, who distribute SSI's top-notch RPGs in the UK, offered up 10 copies of each of SSI's latest, The Dark Queen of Krynn and Treasures of the Savage Frontier. A brace of adventures is on its way to: Sean Johnson of Grantham; Nick Rogers of Willenhall; Alasdair Thomson of Dundee; Peter Toye of Belgium; Andreas Kersten of Hannover; J Shea of Tottenham; Mark Johnson of Wallasey; Simon Phillips of Liskeard; Simon Brown of York; and Elie Gaby of Streatham.

WILD, WEIRD AND WICKED COMPETITION

AMIGA FORMAT ISSUE 40

Commodore kindly donated three of the current A600 game packs for us to give away, complete with Amiga, and they go to the following people: Stuart Crawley of Irvine; Steve Robinson of Dewsbury; and Alan Bradbury of Stockport. Congratulations!

MINDSCAPE'S MIRACLE COMPETITION

AMIGA FORMAT ISSUE 41

Four of Mindscape's amazing keyboard-playing tutor systems was a fabulous offer, so how could we refuse their generosity? The fortunate people who will be learning to play in the new year are as follows: Mrs J Curtis of Cardiff; Gary Kilminster of Great Missenden; R Woodrow of Norwich; and Tom Stanbury of Brighton. Applause all round!

Amiga Format Issue 43

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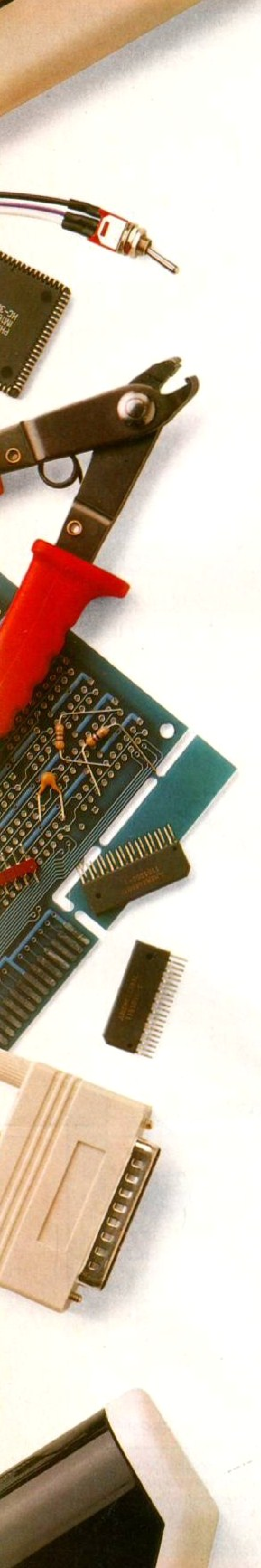
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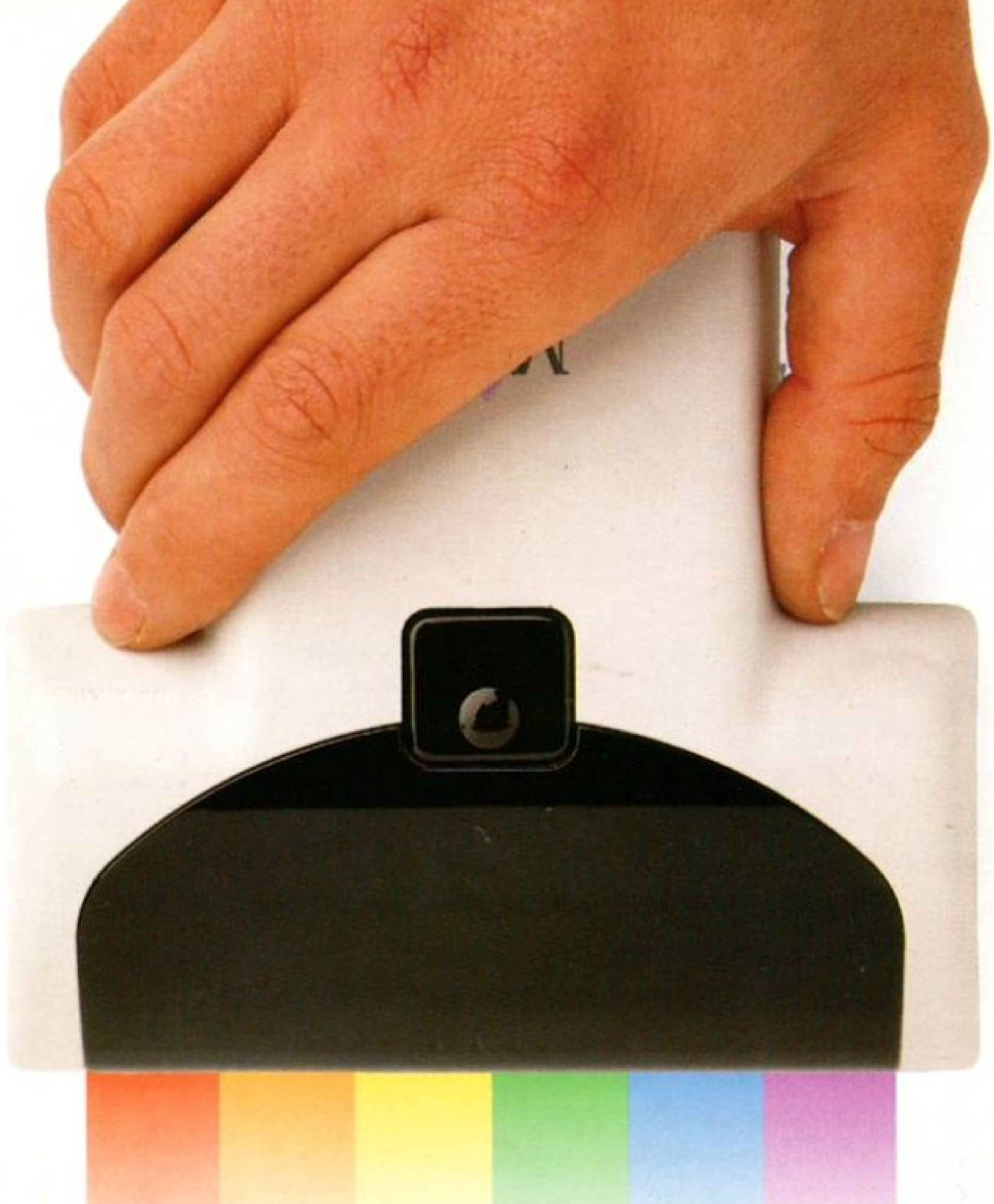
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Colour PowerScan

The Power Computing colour hand-held scanner for the Amiga is now available. This scanner offers the following features

- 4096 colours
- 50-400 DPI
- 4 Scanning modes
- Text
- Greyscale
- Colour halftone
- Colour

The Amiga interface plugs into an A1500/A2000/A3000/A4000 expansion slot with a separate version which connects to the expansion connector of the A500/A500+. The A500 version has a through-port which is compatible with all Amiga 500 expansion peripherals.

The software supplied with this scanner is the new PowerScan Professional 3, which also supports the greyscale scanner and will be available as an upgrade to existing users of PowerScan for £15.

Colour PowerScan v3.0 features

- Real-time 'True-feel' scan option in colour halftone mode
- Images are stored internally as 12-bit graphics, not HAM. This means that no quality is lost due to the Amiga only being able to display HAM images in 4096 colours
- Images are displayed as HAM pictures
- HAM images may be loaded from disk and edited using PowerScan 3
- Image size that can be handled is limited only by the amount of memory available
- Memory does not have to be chip memory as in many art packages
- Images can be saved in various file formats
- View whole image function
- Scale/rotate/skew image or clipboard by any amount
- Crop image
- Clean up, lighten or darken image
- Variable zoom mode
- Draw freehand, lines, circles, boxes and polygons in various fill patterns, brush sizes, paste modes, or with the clip board image
- Clipboards may be scanned directly, or any shape can be cut from the main image
- The software is compatible with all Amigas
- Supports Workbench 2 and ECS screen modes

Colour PowerScan now available

New v3.0 Scan software

PowerScan Colour v3.0 .... £239
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The Amiga can only display 16 greyscales

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